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ABSTRACT

In this study 222 urban and rural Hispanic students from Colorado in grades 10 and 12 were classified into the following catagories: (1) dropouts; (2) strugglers, whose attendance levels and grade point averages (GPAs) were below the class median; and (3) achievers, whose GPAs were in the top tertile of their class. The students and their families were then tested on various instruments. Findings are presented in the following areas: (1) family characteristics; (2) family practices and perceptions; (3) student characteristics; and (4) academic performance and school involvement. Among the conclusions are the following: (1) parental social class is a fundamental determinant of educational success; (2) scholastic demoralization, which begins several years before entry into high school, is a primary cause of educational marginality and dropping out; (3) integration in the majority culture facilitated academic success, but success at school was neither fostered nor handicapped by maintaining one's loyalty to Hispanic language and culture; and (4) participation in extracurricular activities at school fostered academic success by means of reinforcing the social bonding within the school culture. Recommendations for Colorado schools are offered. Data are presented on nine figures. A brief list of references is included. Appendices provide the following: (1) summary of significant group differences; (2) summary of self-image items significantly related to academic success; (3) summary of acculturation items significantly related to academic success; (4) "Fact Sheet: Good Preschools for Poor Children Are Cost-Effective"; (5) "Program for Educational Quality: 2+2 Project Review" for January 29, 1988, and December 18, 1987; and (6) "School Dropouts in the United States" by Aaron M. Pallas, a Center for Education Statistics Issue Paper. (BJV)

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A PSYCHOLOGICAL STUDY OF EDUCATIONAL ATTAINMENT AMONG HISPANICS

Final Technical Report on a Research Project Sponsored by 2+2 Project

Colorado Department of Education

by

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June, 1987

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A PSYCHOLOGICAL STUDY OF EDUCATIONAL ATTAINMENT AMONG HISPANICS

The quality of the research literature on the Hispanic dropout problem is quite uneven, but most reviews (Rumberger, 1981; Steinberg, Blinde and Chan, 1984; National Commission on Secondary Education for Hispanics, 1984; Wallace, 1985; and Guajardo, 1987) yield so much redundancy about the precursors of dropping out that Wallace lists six variables as "hard-core" causes: poverty, illiteracy, failure and being held back in school, problems with the English language, conflict or alienation, and deviant social behavior. Walters and Kranzler (1970) were able to identify 91% of high school dropouts with a combination of four variables in ninth grade: age, IQ, arithmetic achievement, and father's occupation. Lloyd (1978) was able to identify 75% of high school dropouts from a similar combination of variables in third grade: age, IQ, course grades, parental social class, family size, marital status of parents, and tested aptitude in reading, arithmetic and language skills. We should point out that the conceptual illumination from these impressive longitudinal statistics may be less than meets the eye. They could be condensed to mean that children of disadvantaged families from alien subcultures with language handicaps fail early in school, and repeatedly, until they quit trying at the earliest legal opportunity (or sooner). Understandably, their exit from the school system is often accompanied by disappointments, frustrations, confrontations, remedial attempts, and ultimately disillusionment, but the nub of the matter is that most of them quit because they fail at school.

Steinberg et al. (1984) make five telling points in their analysis of the published findings thus far: 1) Although social class is an extremely powerful predictor of dropping out, Hispanic youngsters drop out of school at a higher rate than youngsters from other ethnic and racial backgrounds, even when social class is controlled. 2) Language minority youth have higher dropout rates than others whose primary language is English, and this probably holds true even when social class is discounted. 3) Hispanics drop out at a higher rate than do language minority youth from non-Hispanic backgrounds. 4) Spanish-speaking pupils have lower academic achievement than other non-English-speaking pupils, who appear to suffer little educational disadvantage. 5) The lower school achievement does not appear to be attributable to cognitive deficiencies. It therefore seems that we must look further to explain fully the extraordinary proportion of Hispanics who drop out of school.

Psychological Factors in Educational Attainment of Hispanics

The present study addresses important (and neglected) aspects of childhood development which can plausibly be expected to play a significant role in shaping the educational attainment of Hispanic youth: psychological, social, cultural, and familial factors. Sound empirical evidence in these areas is sparse. Chicano parents and students have been found to value education as much as other ethnic groups (Espinoza, Fernandez and Dornbusch, 1977). Well-educated Chicana mothers hold higher educational aspirations for their children (especially their daughters)

than less educated Chicana mothers, but both Chicana and Anglo mothers are more ambitious for their sons than for their daughters (Laosa, 1982). Educational level of Chicano fathers appears not to correlate with the educational attainment of their offspring, but maternal education does, perhaps in part because educated mothers read regularly to their children (Hirano-Nakanishi and Diaz, 1982). Socioeconomic deprivation (Steinberg et al., 1984) and the children's perception of relative poverty (Hinojosa and Miller, 1984) are both associated with high dropout rates.

Bilingualism and Spanish language dominance in the home appear to have a complicated relationship with the educational attainment of offspring, but the clearest finding has been that frequent reading to preschool children in either Spanish or English is positively related to subsequent educational attainment, probably reflecting the children's internalization of strong educational values of the parents (Hirano-Nakanishi and Diaz, 1982). Laosa (1982) found that well-educated Hispanic parents interact more with their children in English than less educated parents, and that could be expected to ease their children's transition to the school culture.

Achievement levels and self-concepts of Hispanic students are lower in segregated schools than in desegregated schools (Felice, 1973; Gandara, 1982), although the data do not establish a causal connection between the two. Hinojosa and Miller (1984) found that among migrant Hispanics grade level attainment was related to membership in school groups and involvement in extracurricular activities, which can be taken as an indication of assimilation in the school culture. Laosa (1977) observed more disapproval of students expressed by teachers in bilingual classrooms, and Buriel (1983) found that Chicano children received less teacher affirmation for correct responses than Anglo peers. Perhaps more importantly, Buriel reported that the achievement level of the Chicano pupils was directly correlated with the amount of affirmation received from the teacher, whereas Anglo achievement was not.

To summarize, published findings implicate as potential causes of poor educational attainment in Hispanics: a) individual factors, such as educational history and personality variables, e.g. self-image, level of assimilation in the school culture and orientation to social roles; b) family variables, such as parental education, social class, primary language, values and educational aspirations for the children; c) school factors, such as classroom atmosphere, resources for extracurricular activities, and teacher-student interactions. Notably neglected in the research published thus far are intensive studies of family and peer relations, social and academic behavior in the classroom, and the children's perceptions of themselves, their friends, their families, and the place of education in their lives.

Factors Enhancing Educational Attainment

Vasquez (1982) found that "mother's encouragement to do well in school" powerfully discriminated between successful and unsuccessful university-level Chicanas. Strong support of their ethnic identity and their educational aspirations from mothers and teachers appears to be very

important for Hispanic women because they are triple minorities, discriminated against because of their status as women, as ethnic minorities, and as members of lower social classes. Self-image is based partly on cultural feedback regarding the legitimacy of one's primary reference group (Zimbardo, 1979). Therefore, racist and discriminatory experiences may easily lead to the internalization of negative self-characterizations, devaluation of one's ethnic identity and self-regard, and ultimately to demoralization and loss of educational aspirations and achievements.

Chicano students appear to consider higher education later in their school careers than other students do (Munoz and Garcia-Bahne, cited in Vasquez, 1982). Once committed to higher education, Gandara (1982) found that the strongest influences on the success of Hispanic women were strong maternal role models, emotional support from their families, and the advantage of having attended integrated schools. Supportive relationships with same sex peers and parents are important for adolescents of all ethnic types (Burke and Weir, 1978) and especially so for Hispanics (Serrano, 1984), in view of the fact that adolescents must deal with the simultaneous challenges of identity development and educational endeavor. Systematic research in this area is seriously lacking.

Peer Relations

Peer support is often undermined by parental disapproval of the peers, which has been associated with educational failure (Cervantes, 1965). This may be explained, in part, by the friends not being school oriented. Similarly, lack of rapport with one's family is common among dropouts. Cauce, Felner and Primavera (1982) distinguished among three forms of social support for adolescents: family support, informal support from peers, and formal support from counselors, teachers and clergy. Uniformly, Hispanics perceived lower levels of social support than Blacks and Anglos. The authors found high levels of informal support related to low academic performance and to positive peer self-concept. This suggests that strong friendship ties may discourage academic achievement, although Kuvlesky (1981) reported that only 4% of Chicanos cited peer pressure as a reason for leaving school. The disturbing thing about these findings is the possibility that responsiveness to peers, a crucial developmental task for adolescents, might be antagonistic to educational attainment, another central task for healthy adolescent development.

Weiss (1974) has proposed that people look to different persons in their social networks for the provision of different forms of social support. For example, guidance is typically sought from trustworthy authority figures, usually adults, whereas social integration provides companionship and opportunities to share ideas and experience, typically with peers. A key objective in the present study is to examine where high school students seek particular kinds of social support and whether there are differences in this regard between successful students and dropouts. For example, Guajardo and Markman (1985) found that level of support from Hispanic friends was inversely related to Anglo acculturation among

Hispanic women. It would be important to discover whether that friendship pattern is related in any way to academic success.

RATIONALE

Causal analysis begins with careful observation of dependable relationships among variables. In view of the uneven quality of the research knowledge in this field, especially as regards deeper psychological processes, it is prudent to assume that little is presently understood about the primary causes of the dropout phenomenon. Given such uncertainty, a useful strategy is to study intensively a representative sample of high school dropouts and to contrast them with comparable samples of successful students from the same school classes. It is crucial to exert rigorous control in the selection of subjects, in order to ensure stringent comparability across the samples and thus bolster the credibility of any group differences found as meaningful factors related to educational attainment. The contrasts that we observe between dropouts and achievers can therefore serve to identify relevant psychological dimensions from which we can infer causal processes and (later) develop appropriate intervention procedures.

Our theoretical orientation follows closely the competence model, which is identified primarily with Erik Erikson and Robert White. Identity development is a principal element of competence theory. The domains of investigation are based on the previous literature, including family background factors, individual characteristics of the student, school factors, and relationship factors. The psychological factors of greatest interest are social support, cultural assimilation, intellectual and social and emotional development, perceptions of the learning environment, and self-image. The underlying premises of our investigation are that, in order to succeed at school, Hispanic youngsters must acquire a sense of belonging and social support in the school, feel comfortable with the majority culture, identify at least minimally with conventional educational objectives, make progress toward valued social, vocational and sexual roles in society, and develop positive perceptions of themselves and their niche in the school culture. The principal strategy for testing this rationale is to make direct comparisons among three groups of Hispanic pupils (described in detail below) with differing degrees of success in their educational attainment. A large part of this initial endeavor can be regarded as hypothesis formulation or theory generation, but we shall also test empirically many of the correlational hypotheses featured in the research literature.

METHOD

Subjects

The subjects for this study comprised 130 urban Hispanic high school students and their families and 92 rural Hispanic high school students and their families. Half of the urban subjects were drawn from the current 10th grade classes and half from the 12th grade classes at two Denver high schools (North and West). Finding very few differences between class levels in the urban sample, all of the rural subjects were

drawn from one class (10th grade) in Walsenburg, Rocky Ford and Alamosa. Dropouts comprised 39 in the urban sample and 27 in the rural sample who had left school within the last year. Strugglers included 44 urban students and 37 rural students who had remained in school but fell below the class median in current grade-point average and above the class median in absences from school during the current year. Achievers were 47 urban students and 28 rural students who also had remained in school, maintaining a current grade-point average in the top tertile of their class and a record of absences below the class median.

In the urban sample 61 were boys and 69 were girls, and in the rural sample 41 were boys and 51 were girls. The rural sample comprised 21 subjects from Walsenburg, 32 from Rocky Ford and 39 from Alamosa. All of the rural pupils who met the criteria outlined were invited to participate, whereas a random selection was made from the three target groups in the Denver high schools. Approximately two-thirds of all the families solicited in both regions agreed to participate. Each pupil and each parent was paid a $5 honorarium for taking part. In the previous year, 1984-85, 1,211 pupils were reported as dropouts in the 10th and 12th grades statewide, so we can estimate that the 66 dropouts in this project comprised about 5.5% of all the dropouts in their classes throughout the state. Comparable figures for statewide enrollments in those two classes were 11,713 in 1984-85, so we can estimate that the 81 strugglers and 75 achievers in this project comprised about 1.3% of all regularly enrolled pupils in their classes throughout the state. The design of the study is represented schematically below:

Region	Gender	Dropouts	Strugglers	Achievers	Total
Urban	Girls	23	22	24	69
	Boys	16	22	23	61
	Combined	39	44	47	130
Rural	Girls	17	16	18	51
	Boys	10	21	10	41
	Combined	27	37	28	92

Measures

Personal History Form. A modified version of the Personal History Form (Markman, Jamieson and Floyd, 1983) was used to collect demographic and other relevant information, including age, ethnic identification, socioeconomic status, ethnic background, educational history, number of siblings, number of individuals in the household, and

generation level of residence in this country.

Dual Acculturation Scale for Adolescents. Levels of acculturation to the Anglo-American and Mexican-American cultures were assessed by Guzman's Dual Acculturation Scale (1985), which is designed for use with Chicano adolescents. It is a 24-item inventory that requires ratings of subject preferences and frequency of behavior in eight areas, including school, language, food, music, dance, friendships, dating, and holiday celebrations. Internal consistency for 107 Chicano adolescents on the Anglo-American Acculturation Scale was .90 and on the Mexican-American Scale was .91. Test-retest reliability over a three week period was .91 and .90 on the two scales, respectively. Good construct validity was also reported for both scales (Guzman, 1985).

Self-Perception Profile for Adolescents. This measure is the adolescent version of the Self-Perception Profile for Children (Harter, 1985), which is a revision of the Perceived Competence scale for Children (Harter, 1982). This instrument measures self-concept in several different domains, three of which were included in the present study: Scholastic Competence, Social Acceptance and Self Worth. Subscale reliabilities for the Self-Perception Profile for Children are acceptable (Harter, 1983) and psychometric data for the adolescent version will be available shortly.

Network Relationship Inventory. This instrument was developed by Furman and Buhrmester (1985) to assess social support, based on a theory of social provisions by Weiss (1974). On 5-point Likert scales, subjects rated members of their social network (parents, teacher, a relative, peers, and siblings) for satisfaction of various social support needs. The present study utilized six of the scales: Companionship, Intimacy, Reliable Alliance, Enhanceworth of Worth, Punishment, and Conflict. Results of the questionnaire permit an assessment of the quality of social support received and the types of social support exchanged with members of the social network. Several studies have established the reliability and validity of the instrument (Buhrmester, 1983; Furman and Buhrmester, 1985).

Pupil Rating Form. Two classroom teachers evaluated the school behavior of each pupil on the Pupil Rating Form (PRF). This instrument was extrapolated from a coding system developed by Watt, Stolorow, Lubensky, and McClelland (1970) for quantifying information in school records. The PRF consists of 28 behavioral and personality dimensions along which teachers are asked to rate each child on 5-point Likert scales. The form requires approximately 10-15 minutes to complete. Systematic methodological evaluation by Shay (1978) demonstrated the reliability and both convergent and discriminant validity of the instrument. A confirmatory factor analysis yielded four primary factors in the PRF: Scholastic Motivation (9 scales), Extraversion (8 scales), Interpersonal Harmony (7 scales), and Emotional Stability (4 scales).

Offer Self-Image Questionnaire. This instrument measured perceptions of oneself in five domains: Impulse Control, Emotional Tone or Mood, Body and Self-Image, Sexual Attitudes, and Psychopathology (Offer, Ostrov and Howard, 1981). The questionnaire has been administered

to over 15,000 teenagers, including males and females from normal, physically ill, delinquent, and disturbed populations. Standardization data from a normal population of working class and middle class adolescents in the Chicago area yielded internal reliability scores (Cronbach's alpha) ranging from acceptable to moderately high (Offer, Ostrov and Howard, 1977). Stability coefficients ranged from .48 to .84 for the scales, and were maintained at acceptable levels over an eight year period (Offer, 1969; Offer and Offer, 1975). Moderate to high correlations have also been found with other tests of similar constructs in the Bell Inventory, the MMPI and the Tennessee Self-Image Test.

Learning Environment. The children's perceptions of the school climate were examined with a modified version of the Individualized Classroom Environment Questionnaire (ICEQ) developed by Fraser (1980) and the Learning Environment Inventory (LEI) of Fraser, Anderson and Walberg (1982). Three of the ICEQ's five scales were used: Personalization, Participation and Independence. These three scales assess the amount of individualization in the classrooms. The ICEQ has acceptable internal consistency, test-retest reliability, and discriminant validity (Fraser and Fisher, 1983). Three of the LEI's fifteen scales were used: Friction, Difficulty and Cliqueness. These scales measure the amount of conflict perceived by the pupil at school, the difficulty of the course work, and the prevalence of cliques. The first and third of these scales have been found to correlate negatively with measures of learning. All the LEI scales possess satisfactory reliability and internal consistency (Fraser, Anderson and Walberg, 1982). Subjects rated the six aspects of the learning environment at school on 5-point Likert scales.

Procedures

Participation by the subjects was solicited by telephone invitation to the mothers. The phone calls were made by bilingual assistants, so the conversation could be conducted in either English or Spanish. The purpose of the study was explained without deception. The Dropouts were told that we are trying to learn more about Hispanic dropouts and what can be done to deal with that problem. The others were told that we are studying educational attainment among Hispanics and what can be done to foster greater educational achievements by them.

Interviews in the home were scheduled for all subject families that accepted the invitation to participate. The home interviews, lasting about 90 minutes, were carried out by two project assistants, at least one of whom was bilingual. During the first 60 minutes, the index pupil was tested and interviewed by one assistant and one or both parents by the other assistant. A conjoint interview, including debriefing, usually occupied the last 30 minutes. Subjects were assured that their responses would be handled confidentially. The entire procedure was recorded on audiotape for convenience, if the subjects did not object to that procedure. Before the interviews commenced, the standard rights of research subjects were explained to all participants and both parents and children signed informed consent forms.

Data Analysis

The principal statistical analyses employed straightforward 2 X 3 analyses of variance for independent samples, with two levels for gender and three levels of educational attainment. Since preliminary analyses showed few meaningful differences between the 10th and 12th grade subjects and between the two high schools in the Denver study, all the principal analyses pooled the data across grade levels and across schools. For similar reasons the data were pooled across study sites in the rural project. Significant sex differences and significant interactions involving sex were usually noted in the text. Because of the exceptionally large number of significant findings, the tabular results in this report present simply the group mean scores for the Dropouts, Strugglers and Achievers (combining boys and girls), followed by the probability value indicating the level of significance of the F-test for the difference among the three experimental groups. Further statistical analyses are presented discursively in the text.

Concise abstracts of the interviews with the parents and the children were prepared by Project Assistants, based on the tape recordings. Names and other indicators of personal identity were deleted from the abstracts, so that copies of the abstracts could be submitted to the school authorities in each community without violating the confidentiality of the communications with the subjects. These abstracts comprised noteworthy observations by the Project Assistants, salient quotations from the subjects, and anecdotes to illustrate the perspective of the research subjects on their educational experience, including comments, questions, suggestions, and criticisms about the educational system and their own perceived needs.

RESULTS

It is a challenge to present concisely and understandably the results of a project of this scope. A primary strategic decision was made to compare the three experimental groups on the principal variables measured, using analysis of variance procedures. The three groups were sampled from three points on a continuum of educational success that extended from one extreme to the other. Therefore, significant differences among the three groups would indicate which variables were associated with educational success and might consequently be considered as potential causes of success (or, inversely, of failure). One caution about this approach to data analysis must be emphasized: correlational analyses of this sort can not establish definitively the direction of causal effect. That must depend on logical inference about the pattern of relationships observed. For example, household income was found to be significantly associated with educational success because the Achievers in both studies had the highest income and the Dropouts had the lowest.

We can therefore conclude with confidence that educational success is correlated with family income. It seems implausible that a child's educational success would determine his or her family's income, but we might well infer that family affluence contributes to educational success, e.g., by enabling material purchases that facilitate school performance.

We present the results of the statistical analyses in two forms for this report. First, Appendix A at the end of this report summarizes in tabular form the group means of the scores on the variables that yielded significant differences among the three groups, followed in the last column by a "probability value" (P) that indicates the level of significance attached to the F test of differences among the group means in the analyses of variance. In this section we also present nine graphic figures that summarize in historical perspective several aspects of the scholastic performance of the subjects in this study. Second, we present later in this section a narrative summary of the results that may be more useful for readers with limited understanding of statistical methods.

Developmental Summaries of Scholastic Performance by the Three Groups

Figures 1 and 5 present the mean grade-point averages (GPA's) of the three groups in the urban and rural studies, respectively. The data are presented for four periods in the children's school careers: grades K-3, 4-6, 7-8, and 9-10. The first two periods cover the elementary grades; the third period includes middle school; and the last period represents the first half of the high school experience.

Figures 2 and 6 summarize the school attendance of the three groups in the urban and rural studies, respectively. These graphs present the mean number of days absent from school during the academic year, and the data are clustered in the same four developmental periods of their school careers.

Figures 3 and 7 present the composite mean scores for the total test batteries on nationally normed tests of scholastic ability achieved by the three groups in the urban and rural studies, respectively. These data are also clustered by developmental period, with the first three periods depicted for the urban study and all four periods for the rural study. The high schools in Denver employ a local measure called the Proficiency and Review (P & R) Test instead of national tests of scholastic ability. The mean P & R scores in 9th grade for the three groups in the two Denver high schools are presented as a bar graph in Figure 4. In interpreting this figure it is important to know that a score of 32 in each of the four scholastic domains is the criterion for sufficient mastery to graduate from high school.

There was some divergence in the rural study between the developmental patterns for verbal abilities and mathematical abilities. Therefore, Figures 8 and 9 present, respectively, the mean verbal test scores and the mean mathematical test scores of the three groups in the rural schools.

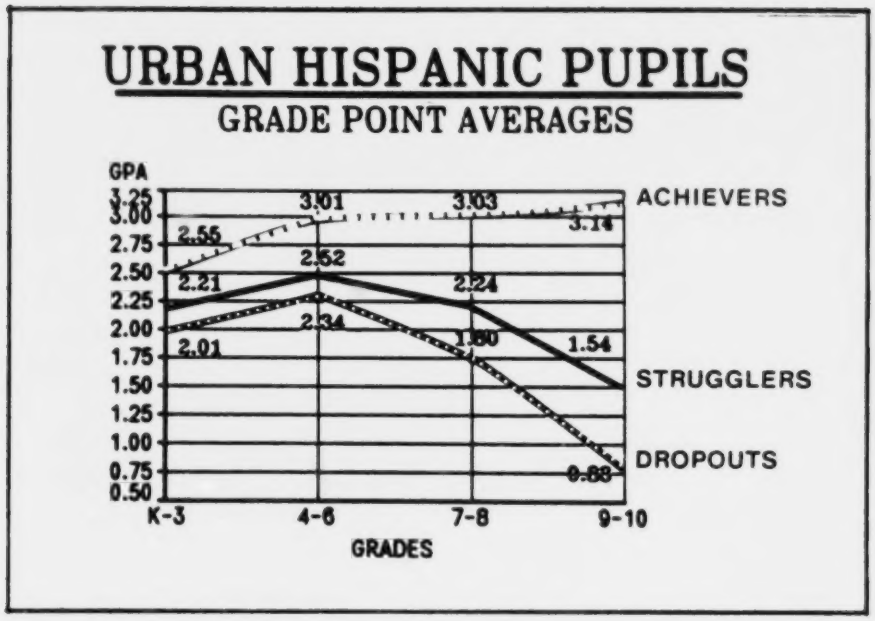

FIGURE 1. Historical summary of the grade point averages of 39 Dropouts, 44 Strugglers and 47 Achievers in two urban high schools.

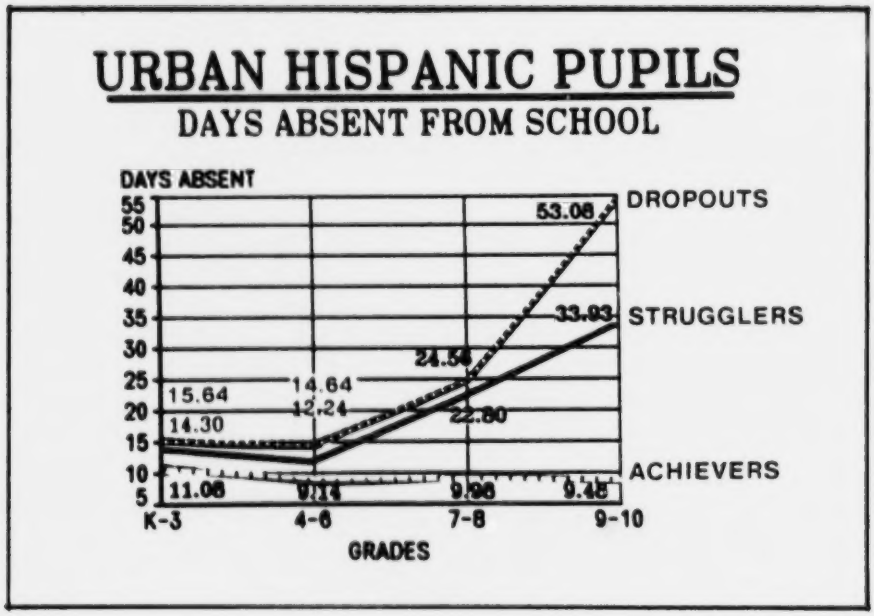

FIGURE 2. Historical summary of the average number of days absent from school each academic year for 39 Dropouts, 44 Strugglers and 47 Achievers in two urban high schools.

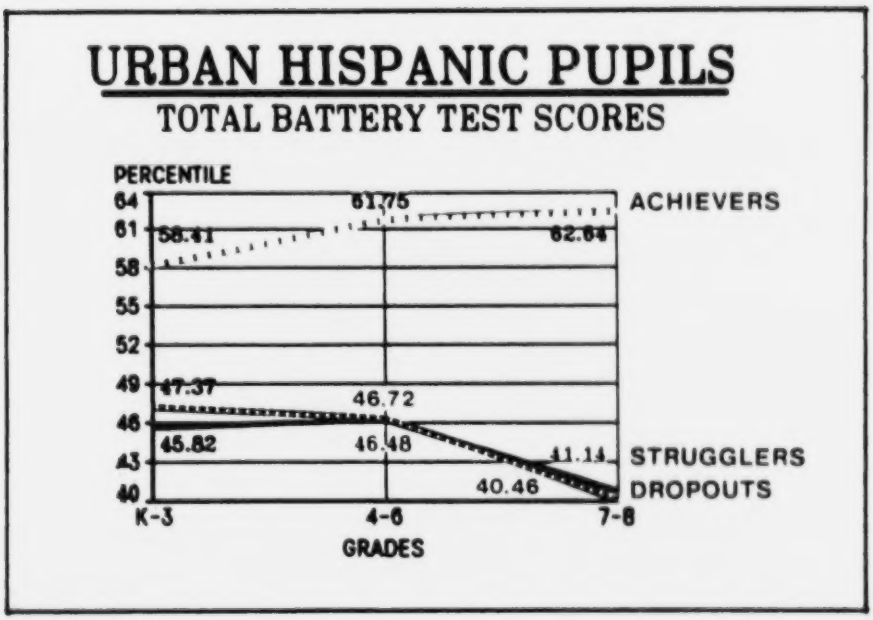

FIGURE 3. Historical summary of the average percentile scores for total batteries on nationally normed tests of scholastic ability recorded for 39 Dropouts, 44 Strugglers and 47 Achievers in two urban high schools.

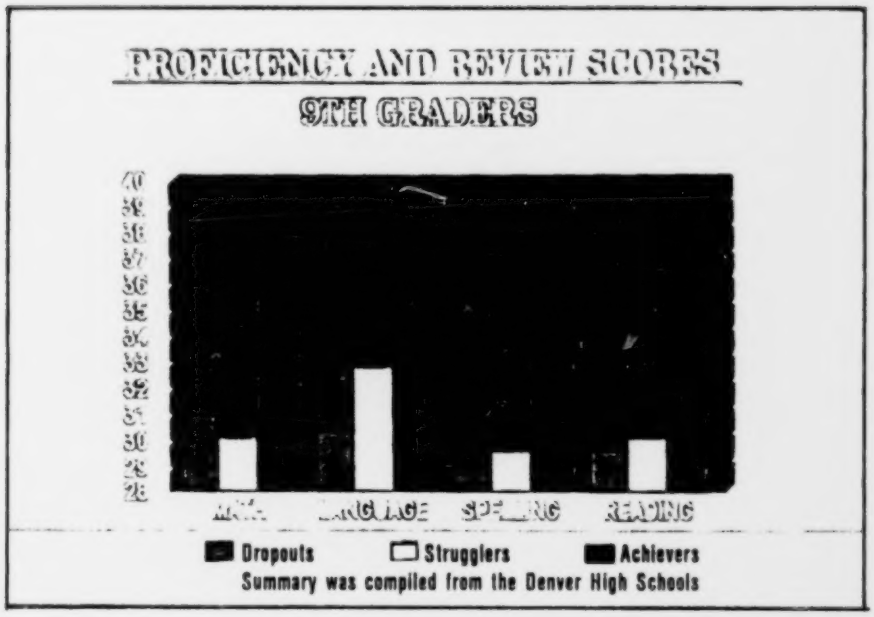

FIGURE 4. Summary of 9th grade Proficiency and Review Scores in four domains of scholastic ability for 39 Dropouts, 44 Strugglers and 47 Achievers in two urban high schools. A score of 32 is the minimum required in the Denver schools for graduation from high school.

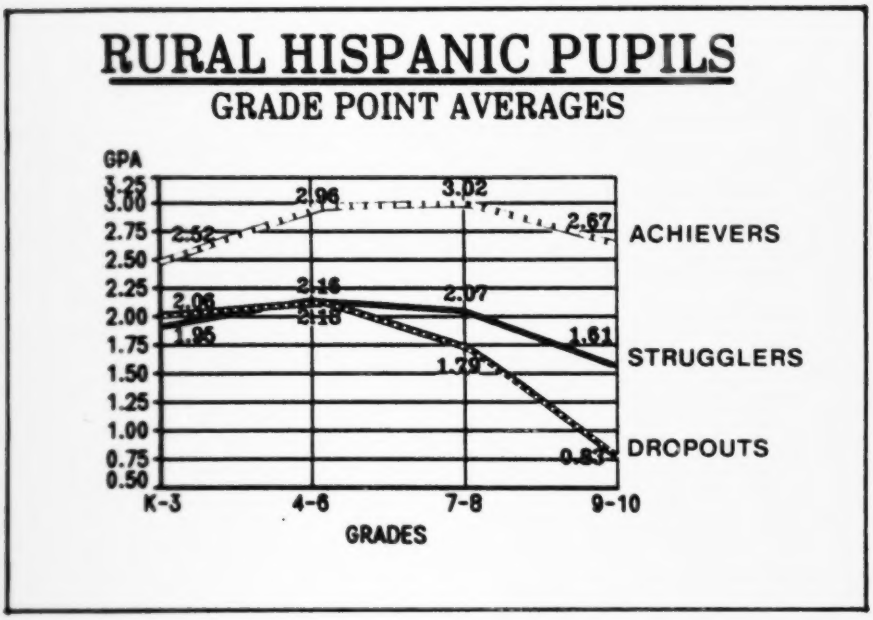

FIGURE 5. Historical summary of the grade point averages of 27 Dropouts, 37 Strugglers and 28 Achievers at high schools in three small rural towns.

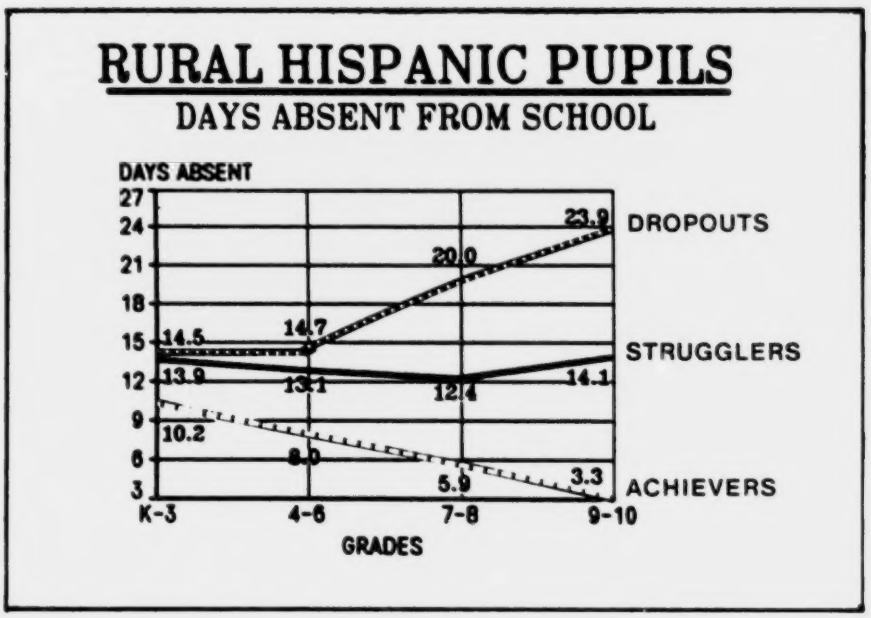

FIGURE 6. Historical summary of the average number of days absent from school each academic year for 27 Dropouts, 37 Strugglers and 28 Achievers at high schools in three small rural towns.

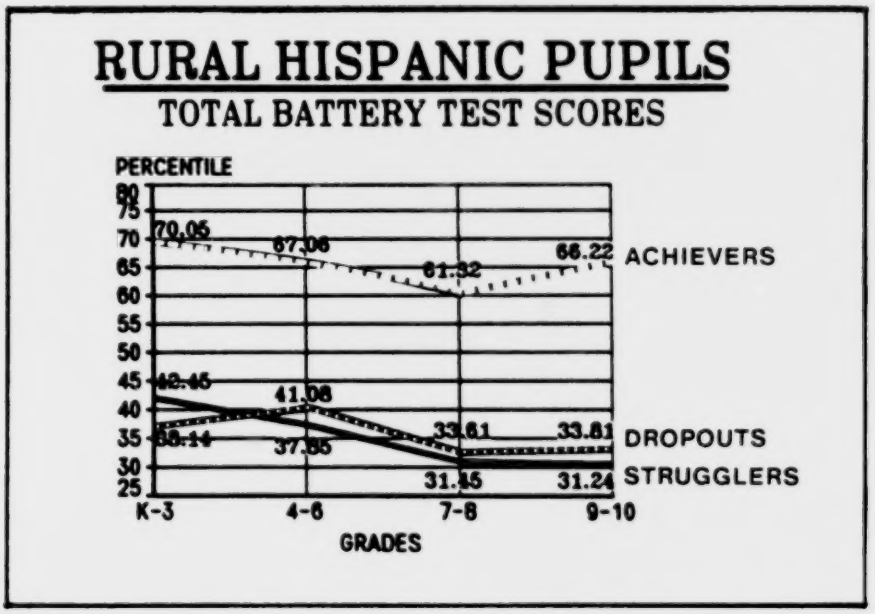

FIGURE 7. Historical summary of the average percentile scores for total batteries on nationally normed tests of scholastic ability recorded for 27 Dropouts, 37 Strugglers and 28 Achievers at high schools in three small rural towns.

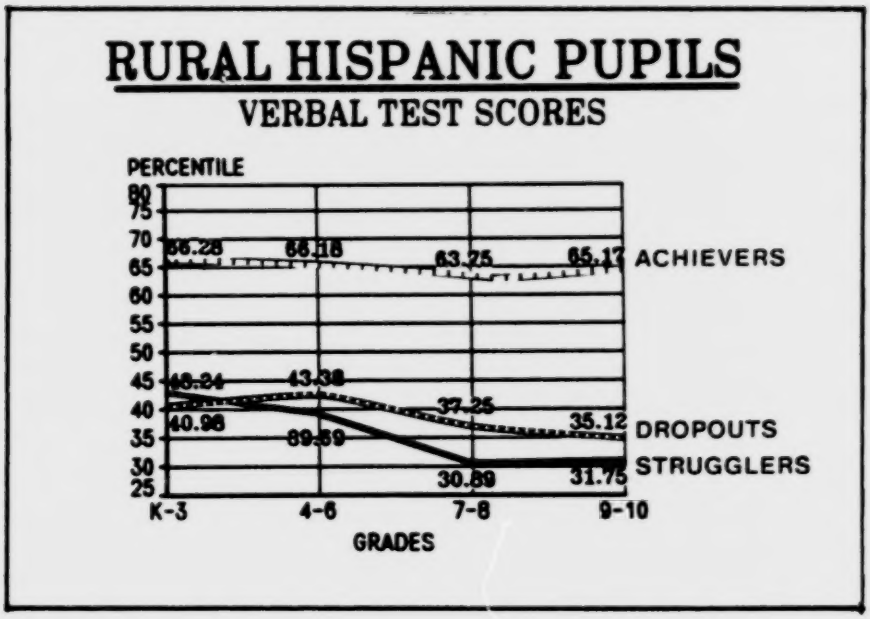

FIGURE 8. Historical summary of the average percentile scores for verbal abilities on nationally normed tests of scholastic ability recorded for 27 Dropouts, 37 Strugglers and 28 Achievers at high schools in three small rural towns.

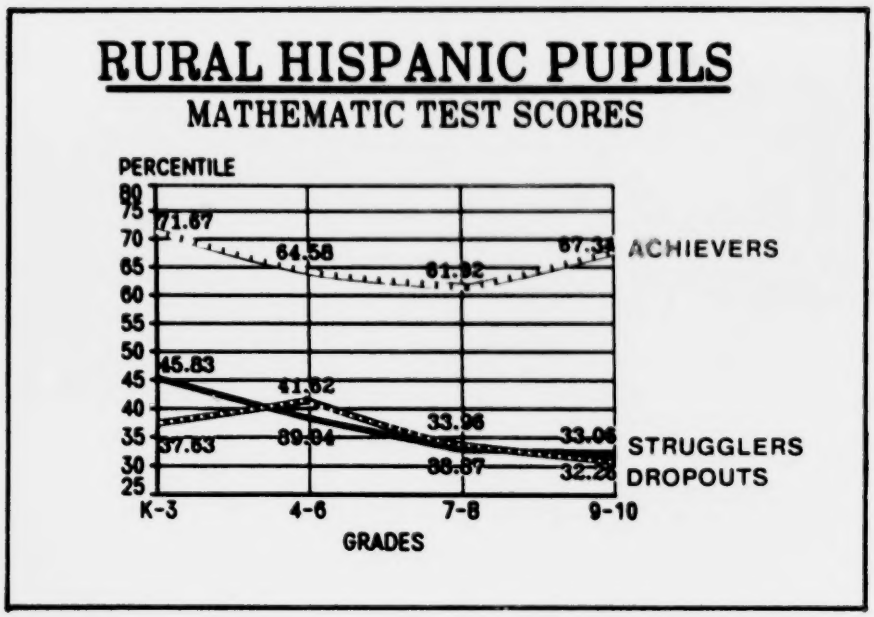

FIGURE 9. Historical summary of the average percentile scores for mathematical abilities on nationally normed tests of scholastic ability recorded for 27 Dropouts, 37 Strugglers and 28 Achievers at high schools in three small rural towns.

The patterns of development depicted in these graphs are very clear and easily interpreted. Statistical tests distinguished the Achievers from the other two groups significantly in every measure of performance, whereas the Strugglers and Dropouts did not differ significantly from one another except in GPA and attendance in the middle school and high school periods. Our interpretation of these results is incorporated in the narrative summary that follows.

NARRATIVE SUMMARY OF RESULTS

The empirical findings are organized here under four rubrics: family characteristics, family practices and perceptions, student characteristics, and academic performance and school involvement.

Family Characteristics

1. Most of the families in this study were from the lower and lower-middle social classes. Educational success of Hispanic children is directly related to parental social class, even within the restricted range of classes studied here, which reflects the advantages of high parental education, occupational status and financial income.
2. In the urban schools, educational failure is associated with a subjective feeling of poverty that exceeds the objective evidence based on family income.
3. In the urban schools, educational success is associated with having smaller families, i.e., fewer children.
4. Relative fluency in English vs. Spanish has little association with educational success. Twenty percent (20%) of the parents in the urban study (primarily mothers of Dropouts) maintain Spanish as their primary language and consider themselves unable to communicate proficiently in English. Otherwise the only noteworthy group differences in language fluency showed that pupils with high academic achievement claim greater facility in reading and writing both English and Spanish, which reflects greater literacy in general, but not differential facility or preference for one language over the other.
5. We found no evidence that educational success is associated with religiosity in parents or children.

Family Practices and Perceptions

6. In the urban schools, educational success is associated with both mothers and fathers having read books to their children. This is exceedingly important because it models parental commitment to literacy. Parents read to their daughters more than to their sons, which may give some advantage to girls in their educational careers. (Parents also visit school more frequently for their daughters than for their sons, which may reveal a related partiality for girls.)
7. Parental exhortations to attend school and do homework are

associated with educational failure, especially in the urban schools. This probably reflects primarily that successful pupils require less parental urging because they are intrinsically well motivated. This finding also reveals that attendance and performance at school are major sources of family distress because the parents of Strugglers and Dropouts are anxious for their children to succeed at school.

8. In the urban setting, educational success of pupils is associated with their mothers' perceptions of having opportunity to discuss their children's school problems with people at home, at school and among friends. This is less true for mothers in the rural setting or for fathers in either setting.

9.. Educational failure is marginally related to pupils' perceptions of discrimination at school, but it is significantly related to discrimination at school perceived by both mothers and fathers, especially in the rural schools.

10. The importance attached to participation in extracurricular activities by mothers (but not by fathers) is related to educational success. However, educational failure is related to mothers' perceptions that their children have been left out of school activities because they are Hispanic.

11. In the urban schools, educational success of the pupils is associated with how comfortable their mothers feel in visiting school.

12. Mothers (and to a lesser extent fathers) attribute more importance to parental education as a cause of their children's scholastic performance if their own children do poorly in school than if they do well in school. This indicates that parents of Strugglers and Dropouts intuitively attribute some responsibility for their children's educational disappointments to their own lack of education.

13. Educational success of Hispanic pupils is more closely related to attitudes and actions of their mothers than of their fathers, because twice as many of the maternal variables were significantly correlated with educational success. Mothers appear to be particularly salient figures in the lives of achieving Hispanic girls.

Student Characteristics

14. Educational failure is associated with frequency of suspensions from school, troubles with the police, acknowledged problems with drugs and alcohol, and frequency of teenage pregnancy. Two thirds of the dropout females in the urban sample and one third of them in the rural sample acknowledged pregnancy either before or after leaving school. Developmental analysis of behavior and performance at school, however, suggests that such adolescent behavior problems are as plausibly considered consequences of scholastic demoralization as they are causes of failure. Teenage mothers in the urban sample cited the lack of financial resources as a major reason for being unable to return to school.

15. Educational success is directly associated with the satisfaction

expressed toward school by pupils and both parents. Similarly, more successful pupils find school classes more interesting, feel more comfortable at school, consider it easier to stay in school, and are more confident of graduating.

16. Educational success is associated with self-evaluated assimilation in the Anglo culture, but it is not associated with either attachment to, or alienation from, one's Hispanic heritage.

17. Educational success is associated with the pupil's perceptions of having opportunity to discuss school problems with people at home, at school and among friends.

18. In the urban schools (but not in the rural schools), educational success is associated with pupils' perceptions of the importance attached to graduation and of support for their academic endeavors by parents, siblings, friends, and school personnel. This finding may reflect, in part, defensive responding by urban pupils who perform poorly in school, but it is very plausible that Dropouts and Strugglers in the urban schools realistically perceive withdrawal of support for their academic striving, or equivocation, giving the pupils some license to limit or terminate their efforts. The lack of association between educational success and perceived support in the rural sample does not reflect a deficiency of support for academic striving. On the contrary, it shows active and impartial scholastic support for all pupils, regardless of their degree of educational success. Rural pupils who limit or terminate their scholastic efforts do so in spite of the support they perceive on all sides to continue.

19. In the urban schools (but much less so in the rural schools), educational success is related to positive qualities perceived by the pupils in their relationships with friends and school personnel. These qualities include companionship, instrumental help, intimacy, affection, enhancement of worth, and freedom from conflict. (Educational success is not systematically associated with perceived social support from family members.) These findings are cause for concern because they indicate that distortions in social rapport, especially outside the home, accompany disappointments in school performance. Whether causes or consequences of such disappointments (or both), they imply heightened emotional risk for urban Hispanics who do not thrive at school, especially for Dropouts. In particular, urban female Dropouts perceive less social support than in-school pupils from teachers, counselors, administrators, and friends. They do not feel admired or respected, but sense deprecation from family, friends, and school personnel. For the most part, these findings were not replicated in the rural study because the Dropouts claimed abundant social support. The rural Strugglers did acknowledge some deficiencies in social support at school, but less so in their relationships with friends. This indicates that social relationships and success at school, in general, are less interdependent in rural schools than in urban schools.

20. In the urban setting, Achievers distinguish themselves from

Strugglers and Dropouts by reporting twice as many role models, both from their families and in the community.

21. Educational success in secondary school is strongly associated with aspirations for higher education in college.

22. Impatience about planning marriage and starting a family at an early age are associated with dropping out of high school. (First steps along these lines have already been taken by many of the Dropouts.)

23. In the rural schools, the self-image of the Achievers is more favorable than that of the Strugglers in several domains: emotional tone, body image, vocational and educational goals, family relationships, mastery of the external world, adjustment, and scholastic competence. In most of these comparisons the Dropouts fall midway between the Strugglers and the Achievers. Urban Chicanas still enrolled in school appear to be more "empowered" than urban Dropouts, reporting better coping abilities, such as learning and planning for their vocational future, adapting better to the immediate environment, and feeling self-confident. These are ominous findings because of their implications for future emotional development of Strugglers and, to a lesser extent, Dropouts. Scholastic competence differentiates the three groups in the urban sample, showing the most favorable self-evaluations among the Achievers and the least favorable among the Dropouts.

Academic Performance and School Involvement

24. Academically successful Hispanic pupils begin their school careers with grade-point averages, attendance and tested scholastic ability better than those of academically marginal pupils and future dropouts. These margins of superiority increase gradually over time, especially in middle school and high school.

25. Grade-point averages, attendance and tested scholastic ability of academically marginal Hispanic pupils and future dropouts remain relatively constant through elementary school, but deteriorate substantially in middle school, i.e., at least a few years prior to entering high school.

26. Educational success is strongly related to level of participation in extracurricular activities and to self-rated involvement in those activities. This is considered vital because it is an indication of full engagement in the school culture. These extracurricular differences could not be attributed to varying amounts of employment after school and on weekends.

27. In the urban schools, educational success is related to four aspects of the learning environment, as perceived by pupils: personalized attention, encouragement of student participation, independence allowed, and lack of friction observed. The results from the rural study were ambiguous, in part because the Achievers were critical of the learning environment and the Dropouts were not. The only clear finding was that more successful rural students find their courses less difficult.

28. Educational success is strongly associated with favorable teacher evaluations of classroom behavior in the areas of scholastic motivation, interpersonal harmony and emotional stability. Success is similarly, but weakly, associated with extraverted social behavior in the urban sample (though not in the rural sample).

29. General contrasts of the urban and rural samples, disregarding level of educational success, provide interesting insights about the life situation and the atmosphere in the two settings. Rural families are rated higher on parental social class, largely because the rural mothers report more educational attainment. However, household income is marginally lower in the rural communities, reflecting the economic recession in outlying areas of the state that depend heavily on agriculture for employment. Urban families have more children in the home. Rural pupils claim to read and understand Spanish better than urban pupils do, but their parents do not differ in either Spanish or English language fluencies. Rural pupils perceive more social support, especially from friends and family, and more support for their scholastic efforts from fathers, opposite-sex friends, coaches, and counselors. On the other hand, urban pupils report more positive self-images in all domains and a more favorable learning environment at school in all domains. The urban pupils are more satisfied with their schools, find classes more interesting and the things learned there more useful. Urban pupils perceive less discrimination at school and feel less that they are treated differently than others because they are Hispanic. Perhaps partly as a result of these "atmospheric" advantages and family income advantages, urban pupils place greater importance than rural pupils on attending and graduating from college. Teachers rate the school behavior of the urban pupils more favorably than the rural pupils in all four areas measured: scholastic motivation, extraversion, interpersonal harmony, and emotional stability. The reciprocation of critical evaluations by teachers and pupils in the rural schools indicates less rapport than in the urban schools, which may limit opportunities for learning.

CONCLUSIONS

1. Parental social class is a fundamental cause of educational success in Hispanic children. Children from more advantaged homes begin and end their school careers with superior classroom performance and tested academic skills. The processes by which such excellence is achieved are not accidental. Being better educated, their parents read books to their children, develop fluency in English and Spanish, and model an unmistakable commitment to literacy. Being more affluent than other Hispanics, they are able to provide better for the material needs of their children and to make aspirations for higher education more feasible financially and psychologically. Their children attend school regularly, actually improving their attendance gradually over the course of their

school careers. In these families, education and literacy are not optional or arbitrary; they are premises or obligations of family living and growing up. It is easy to see how that orientation facilitates the adaptation of such children in the school culture.

2. Scholastic demoralization, which begins several years before the entry into high school, is a primary cause of educational marginality and the woefully high dropout rate among Hispanic pupils in our state. It is well established that children of disadvantaged families from minority subcultures with language handicaps fail early in school, and repeatedly, until they quit trying at the earliest legal opportunity (or sooner). Understandably, their exit from the school system is often littered with disappointments, frustrations, confrontations, remedial attempts, and ultimately disillusionment, but the nub of the matter is that most of them quit because they fail at school. The frustrations of high school personnel in teaching them, the documented limitations in the scholastic skills they master ultimately, the frequent suspensions from school, the troubles with police, the acknowledged involvements with drugs and alcohol, the alarming truancy rate, and the distressing epidemic of teenage pregnancies are all a part of that litter. Undoubtedly, each of these forms of adolescent rebellion adds another nail in the coffin, but the most fundamental causes of educational demise must be traced much earlier in time, to the beginnings of the process of acculturation in the school system.

Wehlage (1983) offers a thoughtful account of the requirements for effective acculturation at school:

> "We believe that the problem is more usefully conceived as one of broad adolescent development. Specifically, the accumulating evidence on adolescents points to the need for experiences that promote those dimensions of both social and intellectual development that are fundamental to the long-term success of young people as they enter adulthood. While specific skills in reading, writing, and arithmetic, and vocational training obviously are needed, there are more fundamental personal and social characteristics required for long-term success as a citizen, parent, and worker in a complex and changing society. The extent to which adolescents develop these qualities hinges largely on the kinds of experiences they have with their peers and adults in school, community, and work place.
>
> ...Social bonding occurs when there is a positive attachment to parents and other significant adults, which leads to a commitment to participate in the institutions of society. Youth are socially bonded when they feel connected, integrated, and are engaged in the main activities of the school.
>
> To secure student engagement, the school must provide them with some degree of success (underline added). Persistent failure and/or messages of rejection will likely have some carry-over effect relative

to conventional norms of work and even observance of the law. Every student should have a niche in school where he or she can achieve success. If the school fails in this effort, marginal students will create their own social system ...where an alternative social integration takes place with norms and attitudes that are contrary to the mainstream of society (p. 19)."

By the time demoralized pupils reach middle school, the die is cast and their educational destiny is - barring heroic intervention - sealed. Their attendance falls off dramatically, missing three to five weeks of school every year. Their tested scholastic skills have plummeted 5-11 percentile points by national norms since the beginning of their school careers. And their grades have begun a nose dive that is apparently delayed only by the earnest desire of their teachers not to add insult to manifest injury.

The transition to high school brings more of the same. When asked to evaluate their school experience, they (and their parents) express dissatisfaction and discomfort at school, citing boring classes and obstacles to staying in school. Their confidence in graduating has been compromised, at best, and they have written off aspirations for higher education. They acknowledge little participation and involvement in extracurricular activities, raising suspicions in their mothers' minds of ethnic discrimination. Teachers judge them to be scholastically unmotivated in the extreme, troublesome influences among their peers, and emotionally unstable. The pupils themselves and their mothers feel isolated, lacking social support at home, at school and among friends for coping with or understanding the problems at school. Understandably, school attendance and homework become sources of antagonism within the family. With their educational horizons shrinking, the children turn their attention to other pursuits outside of school, planning early marriage, starting a family and getting a job. Their parents feel guilty over the possibility that their own lack of education may have contributed to the disappointments in their children's school careers. Based probably on bitter experience, they understand better than their children do how difficult it is to realize lofty adult ambitions without a good education. Ultimately, in the rural setting, demoralized pupils feel stigmatized in their social relationships (especially outside the home) unless, ironically, they achieve some relief from their duress by dropping out of school. Discouraged pupils in the urban schools feel abandoned, deprived of social support from family members, peers and school personnel, and they view the learning environment at school as impersonal, regimented and hostile. In both settings they devalue the importance of graduating and turn their attention wishfully to alternative life plans. It is difficult to evaluate how realistic the perceptions of pupils and parents are, especially as regards the role of school personnel, but we infer that after elementary school their teachers are also frustrated and discouraged in their attempts to teach, counsel and manage behaviorally such

progressively unmotivated pupils. Perhaps the most destructive aspects of this process of demoralization are the perceived loss of social support and the damage to self-image, leading the youngsters to question their current adjustment, their body image, their prospects for the future, the quality of their family relationships, and their capacity to cope with life on their own. This melancholy outlook is poignantly illustrated in the summary of self-image results (Appendix B) by the denial of the statement, "I think that I will be a source of pride to my parents in the future," and by the endorsement of the statements, "I feel that I have no talent whatsoever," and "I feel so very lonely."

3. Integration in the majority culture facilitates academic success, but success at school is neither fostered nor handicapped by maintaining one's loyalty to Hispanic culture and language. (See Appendix C for a summary of the acculturation results by item.) The clearest finding in the research literature about the role of bilingualism is that frequent reading to preschool children in either Spanish or English is positively related to subsequent educational attainment, probably reflecting the children's internalization of strong educational values of the parents (Hirano-Nakanishi and Diaz, 1982). Laosa (1982) found that well-educated Hispanic parents interact more with their children in English than less educated parents, which could be expected to ease their children's transition to the school culture. Perhaps related to this is the finding that only 25% of Hispanic 3- and 4-year-olds were enrolled in preschools in 1981, as compared to 36% of Black and Anglo children of the same age (Davis et al., 1983). We conclude that it is necessary for Hispanic children to make a smooth cultural transition from their home to the school environment, but this transition must not be achieved at the cost of sacrificing pride and loyalty to their Hispanic heritage and language. Biculturalism and bilingualism should enrich the school experience and the lives of all children, serving the larger objectives of expanding literacy and ethnic understanding.

4. Participation in extracurricular activities at school fosters academic success for Hispanics by means of reinforcing the social bonding within the school culture. Social clubs, student government, athletics, musical and artistic activities, and hobby groups offer rich opportunities for successful engagement, encumbered less by the initial scholastic handicaps with which many Hispanics start school. Having a role in a school play or serving on a planning committee invites children to take a proprietary interest in the school and its programs. It also has the potential to break down ethnic prejudices on all sides and counteract feelings of alienation from a distant and foreign bureaucracy. These activities must be relevant to the interests and needs of Hispanic children, so the schools too must change. The motivation to strive academically presupposes a sense of belonging and ownership in the school

culture, both of which can be enhanced by active extracurricular participation. As one illustration, among the strongest findings in the urban study was the salience attributed by successful Hispanic pupils to coaches in supporting their efforts to stay in school and graduate.

In order to present a credible image of integration in the school culture, there must be a substantial representation of qualified Hispanics among the teachers and administrators employed. In one of the rural communities studied here 60% of the high school pupils were Hispanic and 70% of the elementary school pupils were Hispanic, but only one of 26 high school teachers was Hispanic. That is clearly a situation that must change.

RECOMMENDATIONS

Colorado schools must change to accommodate to the needs and interests and ethnic concerns of Hispanic children and families, who constitute the majority of the population in many of the schools and communities in this state and a substantial minority in most of them.

Recommendation 1: We propose that the state establish a fellowship program to recruit achieving ethnic minority students to the teaching profession, with a pay-back provision of one year of teaching service in geographic areas of high need for each year of fellowship support in Colorado universities and colleges.

Recommendation 2: We recommend that compensation of teaching faculty and administrators be continually upgraded, in order to attract more qualified people to this occupation, especially in outlying rural areas.

Recommendation 3: We recommend that extracurricular programs in all schools be improved and expanded, with particular regard to engaging the interest and participation of Hispanic pupils at all levels of scholastic ability.

Recommendation 4: We recommend that every school with Hispanics enrolled appoint a person to the staff as child advocate at the school in order to serve Hispanic pupils and their parents in meeting their educational and personal needs.

Recommendation 5: We recommend that all correspondence with parents of public school children be provided in both English and Spanish.

Recommendation 6: We recommend that college training programs for educators and in-service training programs for teaching faculty, administrators and staff employees be required in order to sensitize them to the special problems of ethnic minorities and poor people.

Dropout prevention and educational enhancement for Hispanics must begin much earlier than high school, in order to counteract or prevent scholastic demoralization early in their school careers. It is not sufficient merely to prevent Dropouts from leaving school; it is essential to transform Dropouts and Strugglers into Achievers who attend school regularly, participate actively in all aspects of the school culture and improve their scholastic performance throughout their school careers.

Recommendation 7: We recommend that public schools throughout the state accept the mandate to disseminate books in English and Spanish and other scholastic materials to families with preschool aged children in their communities by means of bookmobiles and cooperative programs with public libraries and social service agencies.

Recommendation 8: We recommend that bilingual education be incorporated in elementary schools with substantial proportions of Hispanic pupils as a means of facilitating the transition from home to the public school culture.

Recommendation 9: We recommend that schools concentrate on facilitating the transition of Hispanic pupils from elementary to middle school, for example, through mentorship and tutoring programs involving more advanced Hispanic pupils who are Achievers.

Recommendation 10: We recommend that Hispanic pupils and their parents recognize the importance of extracurricular participation as an ingredient of acculturation at school, and hence as a source of support for scholastic achievement.

Recommendation 11: We recommend that all school systems arrange seminars for pupils, parents and school personnel in elementary and middle schools to inform them of the possibilities for higher education and vocational training beyond high school, including financial assistance programs.

Recommendation 12: We recommend that Hispanic parents read to their children (and especially to their sons) in both Spanish and English, starting before the children begin schooling, and consider enrolling them in preschool as a means of compensating for lack of parental education or lack of English language fluency in the home.

According to an ancient Chinese proverb, it is wise to obtain a good education, which is very expensive, because it costs less than a poor education. That wisdom applies for the citizens of Colorado collectively even more than for each of us individually. There are two obvious ways to improve the quality of public education in Colorado: 1) to increase the overall expenditures for education, and 2) to increase the efficiency and cost-economic impact of educational programs. In 1985-86 Colorado spent $3,740 per pupil for public education, which compared with a national average of $3,677 and ranked Colorado 23rd in the country. Many states spent half again as much to educate their children. Optimum impact and cost economy can best be achieved by developing educational policy and instructional programs through systematic empirical research. It is unfortunately apparent that sophisticated research has guided few of the policies and programs now in place in Colorado's educational establishment. More importantly, few educators and administrators comprehend that research, a costly enterprise in itself, need not be merely another forum for declaring cherished personal convictions. Both theoretical investigations (such as this one) and practical experimental trials can be designed to yield impartial and objective tests of policy alternatives and program effectiveness, including questions about how to maximize cost efficiency. Education is a labor-intensive industry, so there are abundant opportunities for both waste and economy, depending on the wisdom of the policies and programs that guide it.

Recommendation 13: We recommend that Colorado aspire to a position of national excellence in education, with budgetary allocations from public and private sources that are commensurate with such aspiration and recognizing that educating the disadvantaged costs more than educating the privileged in our society.

Recommendation 14: We recommend that empirical research be incorporated throughout the educational system in Colorado to guide the development of educational policy and instructional programs and to maximize cost effectiveness.

Recommendation 15: We recommend that early childhood programs be developed to assist children in entering schools ready for success. Such programs have already demonstrated effectiveness in promoting educational attainment of the poor and of ethnic minorities, and in reducing dropout rates.

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APPENDIX A

SUMMARY OF SIGNIFICANT GROUP DIFFERENCES IN HISPANIC EDUCATION PROJECT

Variable		Dropouts	Strugglers	Achievers	P
Demographics					
Household income	Urban	$16,445	$18,819	$25,665	.01
	Rural	13,750	16,430	23,950	.001
Social class*	U	112.15	105.93	100.17	.05
	R	106.32	98.77	91.48	.05
Single-parent families	U	32%	42%	21%	.10
	R	75%	31%	12%	.001
# Children	U	4.92	3.72	3.37	.05
	R	2.67	3.06	3.36	ns
Mother's education	U	8.39	9.72	10.47	.05
	R	10.46	10.69	11.34	ns
Father's education	U	9.42	9.61	10.09	ns
	R	9.32	10.04	10.74	ns
Descriptive Features of Pupils					
# Times suspended	U	2.82	0.84	0.23	.01
	R	2.29	1.11	0.25	.01
# Times trouble (police)	U	0.82	0.63	0.23	.025
	R	1.38	0.97	0.23	.005
Drugs & alcohol keep from school	U	2.28	1.53	1.09	.001
	R	2.00	1.46	1.15	.005
# School activities	U	0.69	1.21	2.30	.001
	R	1.22	1.40	2.12	.05
Involvement in school activities	U	1.95	2.47	3.55	.001
	R	2.25	2.89	3.16	.10
Acculturation (DAS)					
Anglo acculturation	U	97.39	105.05	112.89	.001
	R	104.21	105.80	115.36	.025
Mexican acculturation	U	89.92	83.44	85.70	ns
	R	92.17	87.74	84.54	ns
Anglo-Mexican difference	U	7.47	21.61	27.19	.001
	R	12.04	18.06	30.82	.001

*Reverse coding

Variable		Dropouts		Strugglers		Achievers		P
Parental Involvement with Education								
Mother reads books to children	U	2.95		3.59		4.05		.001
	R		3.75		3.48		3.75	ns
Father reads books to children	U	2.72		2.48		3.49		.025
	R		2.92		2.41		2.93	ns
Frequency school phones mother	U	3.11		2.95		2.25		.025
	R		3.10		2.33		1.96	.025
Frequency school phones father	U	2.68		2.79		2.14		ns
	R		2.92		2.09		1.87	.10
How often parents visit school	U	2.39		2.44		2.36		ns
	R		2.63		2.49		2.68	ns
How often father visits school	U	2.89		2.47		3.33		.05
	R		3.00		2.86		3.60	ns
Parents push not missing school	U	4.33		3.63		3.98		.05
	R		4.25		4.20		3.82	ns
Pupil's Views of School and Personal Issues								
How satisfied with school	U	3.08		3.70		4.40		.001
	R		2.63		3.23		3.93	.001
School classes interesting	U	3.18		3.63		3.87		.005
	R		2.75		2.94		3.78	.001
Feel discrimination at school	U	2.21		1.65		2.04		.10
	R		2.53		2.37		2.14	ns
Feel poor	U	2.64		2.05		1.51		.001
	R		2.13		2.23		1.68	ns
Feel comfortable at school	U	3.44		4.14		4.55		.001
	R		3.17		3.74		4.39	.001
Confidence graduate from school	U	3.21		4.86		5.00		.001
	R		2.30		4.46		4.89	.001
How easy to stay in school	U	2.95		3.53		4.40		.001
	R		2.83		3.69		4.04	.005
Talk problems at home	U	3.56		3.91		4.15		.05
	R		3.39		3.60		4.07	ns
Talk problems at school	U	2.55		3.48		3.26		.01
	R		2.48		3.52		3.18	.05
Talk problems with friends	U	3.55		4.10		4.19		.025
	R		3.59		4.12		4.61	.025

Variable		Dropouts		Strugglers		Achievers		P
Language Fluency								
Mother understands English	U	4.14		4.95		4.96		.025
	R		5.30		5.24		5.42	ns
Pupil understands English	U	5.54		5.47		5.80		.10
	R		5.71		5.46		5.74	ns
Pupil reads English	U	5.21		5.44		5.67		.05
	R		5.50		5.43		5.56	ns
Pupil reads Spanish	U	1.87		2.00		2.59		.10
	R		2.46		2.46		3.26	.10
Pupil writes Spanish	U	1.59		1.72		2.41		.025
	R		2.13		2.06		2.74	ns
Importance for Pupil:								
to get married	U	2.85		2.42		3.09		.10
	R		2.63		2.31		3.21	.01
to have a family	U	2.87		2.23		3.02		.05
	R		2.35		2.23		2.93	.10
to attend college	U	3.49		3.65		4.68		.001
	R		3.04		3.34		4.18	.005
to graduate from college	U	3.28		3.51		4.83		.001
	R		2.92		3.20		4.07	.025
Age to start a family	U	19.32		27.00		26.50		.001
	R		23.15		25.34		26.85	.05
Age planning marriage	U	19.92		25.51		24.95		.001
	R		22.26		24.91		24.97	ns

Variable		Dropouts		Strugglers		Achievers		P
Mother's Views								
Mother pushes not to miss school	U	4.71		4.24		3.07		.001
	R		4.50		4.03		3.25	.025
Mother comfortable visiting school	U	3.54		3.90		4.41		.025
	R		3.70		3.82		3.67	ns
Mother pushes pupil to do homework	U	4.45		3.83		3.39		.005
	R		4.35		4.18		3.42	.05
Mother thinks student activities important	U	3.66		3.93		4.43		.05
	R		3.95		4.21		3.50	.10
Mother thinks child left out of school activities	U	1.79		1.44		1.29		.05
	R		1.95		2.03		1.33	.10
Mother thinks child treated differently	U	2.16		2.10		1.98		ns
	R		2.67		2.61		1.75	.025
Mother thinks child discriminated	U	2.32		2.15		2.24		ns
	R		3.54		3.00		2.21	.005
Mother thinks job important now	U	3.87		3.95		3.27		.10
	R		4.05		3.48		2.54	.01
Mother rates her education as cause	U	3.74		3.32		2.73		.001
	R		3.25		2.79		2.13	.005
Mother's satisfaction with school	U	3.35		3.71		4.36		.005
	R		3.29		3.64		4.04	ns
Mother thinks pupil will graduate high school	U	3.32		4.76		4.91		.001
	R		3.33		4.61		4.92	.001
Mother talks problems at home	U	3.95		3.90		4.62		.025
	R		3.60		4.31		4.38	.10
Mother talks problems at school	U	3.16		3.49		4.07		.025
	R		3.25		4.03		3.96	.05
Mother talks problems with friends	U	2.68		3.51		3.61		.01
	R		3.40		3.39		3.41	ns

Variable		Dropouts		Strugglers		Achievers		P
Father's Views								
Father pushes pupil to do homework	U	4.63		4.60		4.03		.10
	R		4.67		4.19		4.07	ns
Father's satisfaction with school	U	3.16		3.76		4.39		.005
	R		3.08		3.36		4.33	.05
Father thinks pupil will graduate high school	U	3.79		4.72		4.92		.001
	R		3.67		4.91		4.80	.005
Father thinks child treated differently	U	2.11		1.96		1.81		ns
	R		3.67		2.77		2.00	.025
Father rates his education as cause	U	3.68		3.04		2.86		.10
	R		3.09		3.48		2.80	ns
Father talks problems at school	U	3.68		3.29		4.03		ns
	R		4.00		3.14		4.00	.10
Father talks problems at home	U	4.21		4.40		4.82		.10
	R		3.92		3.14		3.94	.10
Pupil's Self-Image								
Emotional tone*	U	34.53		34.02		32.44		ns
	R		24.85		29.21		25.16	.005
Body image*	U	33.60		33.50		33.53		ns
	R		23.00		25.69		20.63	.005
Vocational and educational goals*	U	37.10		36.10		36.49		ns
	R		20.04		22.29		15.91	.001
Family relationships*	U	72.95		73.82		72.76		ns
	R		43.72		49.19		40.10	.005
Mastery of the external world*	U	33.40		33.48		33.17		ns
	R		25.54		29.31		22.29	.001
Superior adjustment*	U	52.18		49.40		48.23		.10
	R		38.00		39.88		32.59	.001

*Reverse coding

Variable		Dropouts		Strugglers		Achievers		P
Pupil's Perceptions of Support to Stay in School								
Coach	U	0.94		1.62		2.80		.001
	R		2.48		3.31		3.18	ns
Administrator	U	2.00		2.40		2.89		.05
	R		2.52		2.86		2.89	ns
Friend	U	2.58		3.07		3.23		.05
	R		3.42		3.40		3.32	ns
Mother	U	3.77		4.19		4.53		.025
	R		4.27		4.03		4.29	ns
Father	U	2.87		3.14		4.02		.005
	R		4.00		3.71		3.96	ns
Pupil's Perceptions of Support to Complete School								
Coach	U	1.00		1.40		2.93		.001
	R		2.86		3.04		3.04	ns
Administrator	U	1.86		2.50		3.26		.001
	R		2.35		2.97		3.00	ns
Same-sex friend	U	2.78		3.14		3.47		.10
	R		3.48		3.41		3.47	ns
Mother	U	3.76		4.40		4.64		.005
	R		4.50		4.17		4.36	ns
Father	U	3.00		3.33		4.17		.01
	R		4.05		3.90		4.16	ns
Teacher	U	3.03		3.50		3.79		.05
	R		3.33		3.91		3.59	ns

Variable		Dropouts		Strugglers		Achievers		P
Perceived Social Support from Friends								
Affection*	U	26.64		22.97		21.69		.05
	R		31.59		32.94		33.46	ns
Companionship*	U	26.18		22.43		20.74		.01
	R		34.68		34.94		35.80	ns
Enhancement of self-worth*	U	28.56		24.29		21.83		.005
	R		31.88		30.46		31.64	ns
Intimacy*	U	29.88		27.37		24.52		.05
	R		28.00		30.25		31.12	ns
Instrumental help*	U	29.68		27.11		25.62		.10
	R		29.96		30.03		28.33	ns
Punishment	U	37.36		37.29		38.36		ns
	R		15.96		18.22		13.64	.025
Perceived Social Support at School								
Affection*	U	38.32		35.82		32.59		.025
	R		18.09		19.41		18.50	ns
Companionship*	U	41.31		39.92		41.14		ns
	R		11.96		14.10		12.55	.10
Enhancement of self-worth*	U	36.07		31.45		29.23		.01
	R		19.68		22.34		22.24	ns
Intimacy*	U	40.83		40.85		41.73		ns
	R		11.73		15.37		11.75	.005
Punishment	U	38.11		36.88		39.18		ns
	R		17.54		20.07		16.21	.10
Conflict	U	37.29		39.50		42.49		.005
	R		17.14		18.59		12.93	.01
Perceived Social Support from Family								
Intimacy*	U	27.12		32.26		29.39		.05
	R		28.64		25.46		24.33	ns

*Reverse coding

Variable		Dropouts		Strugglers		Achievers		P
Learning Environment Perceived by Pupils								
Personal Contact	U	18.15		20.38		21.13		.025
	R		16.07		15.63		15.23	ns
Participation	U	20.00		20.93		22.19		.025
	R		15.14		15.20		12.87	.05
Independence	U	13.29		14.83		15.94		.01
	R		22.72		20.17		20.94	.025
Friction*	U	14.68		16.10		17.68		.005
	R		20.18		19.88		20.23	ns
Course Difficulty*	U	16.10		16.17		15.89		ns
	R		19.04		19.11		20.69	.025
School Behavior Observed by Teachers								
Scholastic Motivation	U	3.19		3.27		4.06		.001
	R		2.33		2.68		3.80	.001
Extraversion	U	2.98		3.06		3.41		.05
	R		2.83		2.80		3.16	ns
Harmony	U	3.81		3.74		4.29		.001
	R		2.92		3.44		4.14	.001
Emotional Stability	U	3.43		3.38		3.96		.001
	R		2.67		3.17		3.89	.001
Self-Perception Profile								
Scholastic Competence*	U	2.45		2.11		1.93		.001
	R		2.33		2.52		2.05	.025

*Reverse coding

APPENDIX B

SUMMARY OF SELF-IMAGE ITEMS SIGNIFICANTLY RELATED TO ACADEMIC SUCCESS

The following 20 items (of 82 altogether) from the Self-Image Questionnaire yielded statistically significant differences among the three subject groups in both the urban and rural studies (15 items) or else a significant difference in one study and a strong trend toward significant difference in the other study (5 items). The statements reveal the cumulative psychological toll of educational failure because, in every instance, the differences showed that the Achievers had more favorable images of themselves than the Strugglers and/or the Dropouts. The item statements are presented below, followed by the probability values (P) of the tests of statistical significance for the urban and rural studies, respectively. By standard convention, a probability value of .050 is statistically significant because a difference that large would occur by chance less than one time in 20. At the extreme, a probability value of .001 indicates a very dependable difference because it would occur by chance less than one time in a thousand.

Item #	Self-Image Statement	P Value	
	Statements endorsed by Achievers:	Urban	Rural
32.	I am a superior student in school.	.001	.001
18.	The picture I have of myself in the future satisfies me.	.001	.001
33.	I feel relaxed under normal circumstances.	.002	.001
19.	I am sure that I will be proud about my future profession.	.001	.002
82.	Dealing with new intellectual subjects is a challenge for me.	.001	.003
40.	Our society is a competitive one, and I am not afraid of it.	.001	.004
5.	I think that I will be a source of pride to my parents in the future.	.001	.011
39.	When I decide to do something, I do it.	.025	.006
7.	Most of the time I think the world is an exciting place to live in.	.012	.023
15.	If I put my mind to it, I can learn almost anything.	.042	.001
55.	I feel that I am able to make decisions.	.036	.014
23.	My work, in general, is at least as good as the work of the guy next to me.	.041	.050
24.	When a tragedy occurs to one of my friends, I feel sad too.	.091	.001
35.	At times I think about the kind of work I will do in the future.	.071	.029
	Statements denied by Achievers:		
78.	I am certain that I will not be able to assume responsibilities for myself in the future.	.010	.001
74.	School and studying mean very little to me.	.001	.011
63.	I feel that I have no talent whatsoever.	.001	.017
47.	I find life an endless series of problems without solutions in sight.	.001	.062
53.	Usually, I feel that I am a bother at home.	.021	.060
49.	I feel so very lonely.	.059	.029

APPENDIX C

SUMMARY OF ACCULTURATION ITEMS SIGNIFICANTLY RELATED TO ACADEMIC SUCCESS

The Dual Acculturation Scale comprises 24 items that measure the assimilation of Hispanic adolescents in various aspects of Anglo culture and 24 items that measure their orientation to aspects of Mexican-American culture. In both the urban and rural studies Anglo acculturation scores were significantly related to academic success at school, whereas Hispanic acculturation scores did not differ significantly among the three groups of subjects. In view of the controversy that is likely to focus on these findings, this summary presents the specific item statements on the questionnaire that yielded significant differences among the groups, followed by the probability values (P) of the tests of statistical significance for the two samples combined. The samples for the two studies were combined to produce the most stable mean scores for each subject group, because the findings from the two separate studies were mutually corroborative and support the same general conclusions about acculturation. By standard convention, a probability value of .050 is statistically significant because a difference that large would occur by chance less than one time in 20. At the extreme, a probability value of .001 indicates a very dependable difference because it would occur by chance less than one time in a thousand. There were 17 Anglo acculturation items (of 24 altogether) that differentiated the groups significantly, all of them endorsed more strongly by Achievers than by Strugglers and/or Dropouts. There were 6 Hispanic acculturation items (of 24 altogether) that differentiated the groups significantly, all of them endorsed more strongly by the Dropouts than by the Strugglers and/or the Achievers.

Item #	Acculturation Statement	P Value
	Anglo acculturation items endorsed most by Achievers:	
13b.	When you read, how often would you LIKE to read books, magazines or newspapers in English?	.001
17b.	When you spend time with friends at school, how often would you LIKE to spend time with Anglo American friends?	.001
13a.	When you read, how often DO you read books, magazines or newspapers in English?	.002
11b.	When you listen to music, how often would you LIKE to listen to music that is in English or that is Anglo American (for example, rock, soul, disco)?	.002
3b.	When you dance, how often would you LIKE to dance to music that is in English or is Anglo American (for example, rock, soul, disco)?	.004
11a.	When you listen to music, how often DO you listen to music that is English or that is Anglo American (for example, rock, soul, disco)?	.006
17a.	When you spend time with friends at school, how often DO you spend time with Anglo American freinds?	.009
9b.	When you have a steady girlfriend or boyfriend, how often would you LIKE to have an Anglo American girlfriend or boyfriend?	.015
3a.	When you dance, how often DO you dance to music that is in English or is Anglo American (for example, rock, soul, disco)?	.019
19a.	When you date, how often DO you date people who are Anglo American?	.019
1b.	How often would LIKE to wear styles (for example, clothes, hairstyles) that are Anglo American?	.020
9a.	When you have a steady girlfriend or boyfriend, how often DO you have an Anglo American girlfriend or boyfriend?	.027
7b.	When you eat, how often would you LIKE to eat Anglo American food?	.033
1a.	How often DO you wear styles (for example, clothes, hairstyles) that are Anglo American?	.044
21b.	When you watch T.V., how often would you LIKE to watch T.V. programs in English?	.046
5a.	How often DO you use English?	.046
23b.	When you spend time with friends outside of school, how often would you LIKE to spend time with Anglo American friends?	.047
	Hispanic acculturation items endorsed most by Dropouts:	
20a.	How often DO you wear styles (for example, clothes, hairstyles) that are Mexican American?	.001
20b.	How often would you LIKE to wear styles (for example, clothes, hairstyles) that are Mexican American?	.001
8b.	How often would LIKE to use Spanish?	.019
24b.	When you listen to msuic, how often would you LIKE to listen to music that is in Spanish or that is Mexican American?	.027
12b.	When you date, how often would you LIKE to date people who are Mexican American?	.038
10b.	When you celebrate holidays or special events (for example, birthdays, weddings), how often would you LIKE to celebrate in a Mexican American way?	.050

Fact Sheet

GOOD PRESCHOOLS FOR POOR CHILDREN ARE COST-EFFECTIVE

It would be hard to imagine that society could find a higher yield for a dollar of investment than that found in preschool programs for its at-risk children.

Committee for Economic Development
Investing in Our Children (1985)

Renewed public interest in early childhood programs in the U.S. springs both from the growing need for child care and from the need to lessen the harmful consequences of childhood poverty. The percentage of mothers of young children who were employed, only 14% in 1950, grew to 48% in 1985. The percentage of young children who were poor, only 15% in 1969, grew to 23% in 1985.

The High/Scope Foundation's Perry Preschool study strikingly demonstrates the potential benefits of high quality early childhood programs for poor children. In the study, poor 3- and 4-year-olds were randomly assigned either to a group that attended the Perry Preschool program or to a group that did not. Follow-up on both groups years later showed that preschool participation had apparently *increased* the percentages of persons who, at age 19, were literate, employed, and enrolled in postsecondary education, whereas it had *reduced* the percentages who were school dropouts, labeled mentally retarded, and on welfare.

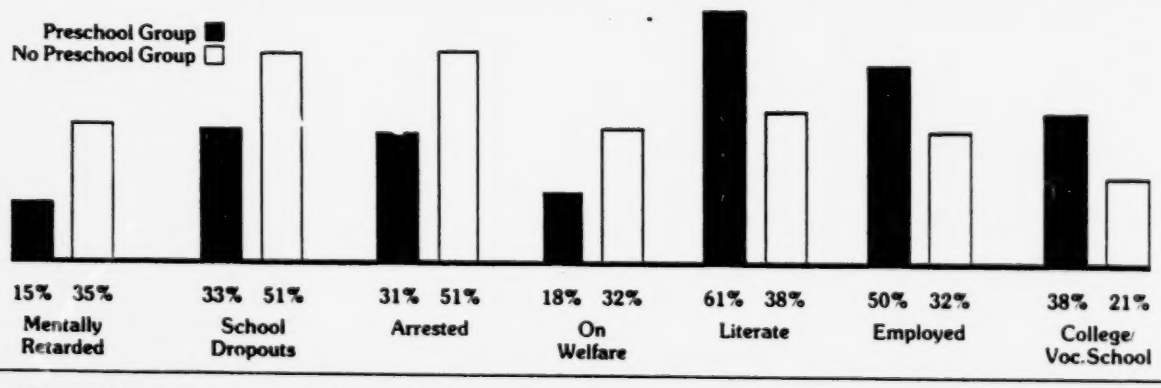
An economic cost-benefit analysis of the Perry Preschool program and its long-term effects revealed that such a program can be an excellent investment for taxpayers, *returning six dollars for every dollar invested in a one-year program, three dollars for every dollar invested in a two-year program.*

Other research on good early childhood programs for poor children confirms that such programs have positive short-, mid-, and long-term results. The evidence is that these programs *do* help improve children's intellectual and social performance as they begin school, *probably* help children achieve greater school success, and *can* help young people achieve greater socioeconomic success and social responsibility. Yet, despite these findings, fewer than 1 in 3 poor children has the opportunity to attend a preschool program.

These findings apply to children who live in poverty and are at risk of school failure. There is less evidence on preschool program effectiveness for children who are not poor or otherwise at risk of school failure. A good supposition might be that a preschool effect found for poor children would also apply to middle-class children, but to a lesser extent.

Such impressive results were achieved only by *good* preschool programs — ones characterized by the following: developmentally appropriate curriculum and assessment procedures; teaching teams that are trained in early childhood development and continue to receive such training; administrative support that includes curriculum leadership; classes with 2 adults and fewer than 20 children; and systematic efforts to involve parents as partners in their children's education. Such programs may be relatively expensive, but a good, expensive preschool program with a high return on investment makes more economic sense than a poor, inexpensive program with a low return.

High/Scope Perry Preschool Study Age-19 Findings



Note. All group differences are statistically significant, $p < .05$, two-tailed.

PROGRAM FOR EDUCATIONAL QUALITY

2-2 PROJECT REVIEW

January 29, 1988

GRADE RETENTION: A CONTRIBUTION TO DROPPING OUT

When a student leaves school before he or she graduates, a clear statement is being made: I do not belong here! This sense of "not belonging" is a manifestation of one's alienation from a place and other persons. How often have we heard dropouts say, "No one cares"? Urie Bronfenbrenner states that "To be alienated is to feel cut off from family, friends, school, or work." 1

School staff interested in addressing the dropout issue must come to grips with the role alienation plays in the life of the children and youth they serve. Contributing factors must be identified and those that are within the control of educators must be changed. The purpose of this article is to examine one school policy issue that is highly associated with dropping out: grade retention.

The Policy of Grade Retention

Gregg B. Jackson defines grade retention as "the practice of requiring a student who has been in a given grade level for a full school year to remain at that level for a subsequent school year". 2 This practice of non-promotion is not uncommon in our public schools. It is highly associated with dropping out. We know that the dropout rate among students who have repeated one or more grades is twice that of students who have not been held back. It may be that this is a practice that needs to be examined in the light of what alienation contributes to a student who leaves school.

The Effects of Grade Retention

A study conducted by M. Scott Norton found the following:

1. Non-promotion and Learning. Non-promotion does not increase learning -- pupils who ordinarily would be retained and are promoted tend to learn more the next year than pupils of like ability who are not promoted.

2. Social Maturity. Non-promotion does not increase socialization or learning readiness for most pupils. Retained pupils often show actual regression.

3. Group Homogeneity. Non-promoted children [illegible] tend to choose companions from grades higher than their own and socialization is not improved. Non-promotion does not increase the homogeneity of groups.

4. Motivation. Non-promotion tends to promote discipline problems, is a negative influence on the child's self-concept, and serves as a potential danger for fostering personal maladjustments. 3

Holms and Matthews, after conducting an examination of the research in this area concluded:

> Those who continue to retain pupils at grade level do so despite cumulative research evidence showing that the potential for negative effects consistently outweighs positive outcomes. Because this cumulative research evidence consistently points to negative effects of nonpromotion, the burden of proof legitimately falls on proponents of retention plans to show there is compelling logic indicating success of their plans when so many other plans have failed. 4

By retaining a student in grade it would appear that we are contributing to the dropout problem. The student will face humiliation and teasing from peers. The family may be embarrassed by or punish the child. School becomes a place which the child or youth "can't wait to leave."

Alternatives to Grade Retention

Montrose, Durango, and Greeley have piloted programs that could be utilized as alternatives to grade retention. They include summer school activities, alternatives to suspension, and alternative school placement. For additional information please contact:

Dave Smith
Colorado Department of Education
201 E. Colfax Avenue
Denver, CO 80203

Footnotes

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2. Jackson, Greg B., The Research Evidence on the Effects of Grade Retention, Review of Educational Research, Fall 1975, Vol. 45, No. 4, pp. 613-635.

3. Norton, Scott, It's Time to get Tough on Student P- ...tion - Or Is It? Contemp...ary Education, Vol. 54, No. 4, Summer 1983.

4. Holms, Thomas and Matthews, Kenneth M., The Effects of Nonpromotion on Elementary and Junior High School Pupils: A Meta-Analysis, Review of Educational Research, Summer, 1985, Vol. 54, No. 2, pp. 225-236.

PROGRAM FOR EDUCATIONAL QUALITY

2-2 PROJECT REVIEW

December 18, 1987

Early Childhood Education as Dropout Prevention

The Problem

The consequence of students leaving school before completing their education concerns parents, educators, business community leaders and taxpayers. Besides the obvious loss of human potential and the pain of failure, there are devastating economic consequences. Consider this:

- In 1985 the unemployment rate for men and women ages 16-24 who had not graduated from high school was more than double the rate for high school graduates (U.S. General Accounting Office, 1986).

- The costs of dropping out exceed $200,000 per individual dropout over his or her lifetime and 200 billion dollars for each school class across the United States (Stanford Education Policy Institute, 1985).

Who Drops Out?

There is no one reason why a student drops out. Dropping out is a highly individual dynamic that is influenced by experiences in school as well as out of school. There are certain predictors of dropping out that do stand out.

- Poor academic performance is a strong predictor. Students with a "D" average are 5 times more likely to dropout than students with a "B" average (U. S. Department of Education, 1983).

- Students from low income families are twice as likely to drop out as students from middle income families and three times as likely to drop out as those from high income families (National Center for Educational Statistics).

- A student's race/ethnic background is also associated with the likelihood of graduating. The graduation rates for whites is 80%, for blacks it is 64%, for Hispanics it is 56% and for American Indians it is 51%.

How Early Do We Know the Potential Dropout?

In order to prevent dropouts, it is essential to know who they might be as early as possible. Academic performance is a strong predictor, as well as racial/ethnic background. There is reason to believe that the dropout dynamic is in place by first grade. In 1987, the Colorado Department of Education sampled 25% of our first graders using the Iowa Tests of Basic Skills. On this test we would expect the average score to be 50. The following are averaged scores:

. Blacks	38th percentile
. Hispanics	45th percentile
. Whites	68th percentile
. No Preschool & No Kindergarten	52nd percentile
. Kindergarten Only	59th percentile
. Preschool and Kindergarten	68th percentile

The Role of Preschool as a Dropout Prevention Strategy

We know that preschool experience can make a critical difference for the child. The High/Scope Foundation has studied the Perry Preschool Project graduates through the age of 19 and found the following results:

	Preschool	No Preschool
. Completed High School	67%	49%
. Hold Jobs	50%	32%
. Arrested for Criminal Acts	31%	51%
. Receiving Public Assistance	18%	32%

Looking at the impact of preschool experience in combination with Colorado's first grade achievement data, the importance of preschool as a dropout prevention strategy can be seen.

The Dropout Prevention Project

The Colorado Department of Education, in partnership with Governor Romer's Job Training Office and the Colorado Trust, is sponsoring the High/Scope "Training of Teacher Trainers Project" in Colorado. This will provide our state with 35 trainers who will be able to implement a model with proven effectiveness in serving young children placed "at-risk."

In addition, the Colorado Department of Education is supporting Pueblo 60 in identifying and serving 4-year olds who are placed at risk of academic failure. Further information about this and other projects can be obtained by writing or calling:

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Dropout Prevention Coordinator
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201 E. Colfax Avenue
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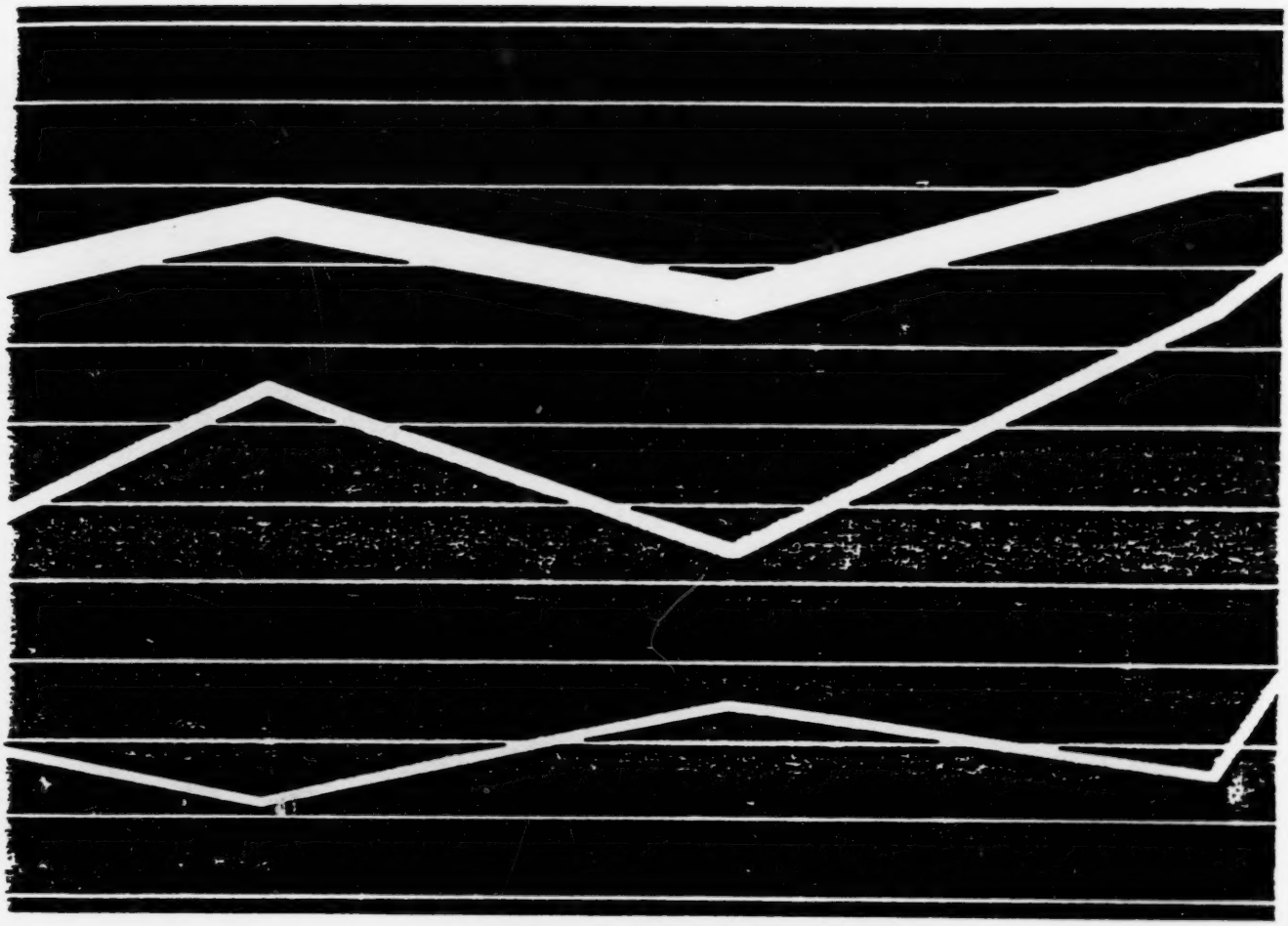
Center for Education Statistics

School Dropouts in the United States



Issue Paper

Office of Educational Research and Improvement
U.S. Department of Education

School Dropouts in the United States

by Aaron M. Pallas

Overview

Substantial numbers of students drop out before graduating from high school. Many never return to the educational system. Dropouts are of concern to families, educators, and policymakers for a variety of reasons. They may suffer economic and social disadvantages throughout their lives. For the Nation as a whole, the costs of the dropout problem are reflected in higher welfare expenditures, lost tax revenues, and increased crime and crime prevention costs (Catterall, 1985). The intangible costs to individuals and society are also substantial.

This paper presents a variety of information regarding school dropouts. It examines national data and trends related to dropouts, and the reasons for dropping out. In addition, it considers the consequences of dropping out, with particular attention to the frequency and results of later returns to the education system. The major findings are:

Dropout Rates

- Calculating dropout rates is difficult because of definitional and data problems.
- National data over time on the incidence of dropping out do not exist. The available annual national data instead measure related phenomena—high school graduation or completion rates.
- Nationally, slightly less than three-quarters of all 18- and 19-year-olds have completed high school.
- High school completion rates vary considerably across school districts and population groups. They are much lower than the national average in urban areas and for black and Hispanic youth.

Reasons for Dropping Out

- Poor academic performance is the best predictor of who drops out of school.
- Students who are rebellious, delinquent, or chronically truant drop out of school at higher rates than those who are not.
- Substantial numbers of young women cite pregnancy or marriage as reasons for dropping out.

The Consequences of Dropping Out

- Dropouts have more difficulty in finding and holding jobs. The estimated unemployment rate for dropouts shortly after they leave school is more than twice that of high school graduates of the same age.
- Those who do not finish high school earn less money annually than high school graduates. In 1985, among year-round, full-time workers 25 years old and older, the typical high school graduate earned over $4,000 per year more than a comparable worker with 9 to 11 years of schooling.
- The estimated lifetime earnings of high school graduates who do not attend college are approximately $200,000 higher than the earnings of those who do not complete high school.

Returning to the Educational System

- An estimated 40 percent of the students who drop out of high school subsequently return to the educational system.
- An estimated 30 percent of the students who drop out of school eventually receive a high school diploma or an alternative credential.
- National data show that the proportion of individuals who have not completed high school declines considerably with age. The noncompletion rate for 31- to 34-year-olds is approximately half that of 18- and 19-year-olds.
- The decrease in the noncompletion rate with age is due to the graduation of some who were still in school at age 18-19 as well as the return to school and completion by others who were out of school as 18- and 19-year-olds.
- Those who are more likely to return and complete include whites, those with higher test scores prior to dropping out, and those from families with a higher socioeconomic status.
- Alternatives to regular day school programs have become more prevalent in the past 20

years, and many people are using these routes to acquire high school credentials.

- Little is known about the social, economic, and educational consequences of obtaining high school graduation credentials outside of regular day school programs.

Implications

- A key to effective dropout prevention programs may be the early identification of potential dropouts, so that services can be provided to at-risk students prior to high school.

- Given the substantial proportion of dropouts who later return to the educational system, another approach to the dropout problem is greater efforts to bring young people back into the educational system after they have dropped out.

- Also helpful may be more flexible high school programs, such as those for expectant mothers and parents of young children, that allow youth to stay in school while meeting family or job responsibilities.

- It is important to know who receives alternative high school credentials, and what the consequences of obtaining these various credentials might be.

Data

Three sources of national data are used in this review: the Bureau of the Census' Current Population Survey (CPS), the Center for Statistics' (CS) Common Core of Data (CCD), and CS' High School and Beyond (HS&B) study. These are described in detail in the appendix to this paper.

Dropout Rates

Difficulties in Measuring Dropouts

How severe is the dropout problem? While the question is simple, the answer is not, because there is no standard definition of who is a dropout or how to calculate a dropout rate.

- Most education agencies (schools, school districts, and States) have their own unique ways of calculating dropout rates. There are no consistent definitions of who is considered a dropout, or what the appropriate baseline population is on which to calculate a dropout rate.

- Because definitions of the dropout rate vary so much from one locale to the next, it is difficult to compare dropout rates across schools, districts, and States.

Even the two major Federal producers of education data, the Bureau of the Census and the Center for Statistics in the U.S. Department of Education, collect data related to dropouts in quite different ways.

Many of the discrepancies in reported "dropout rates" stem from the fact that the data being collected do not directly pertain to dropouts, but to other related concepts.

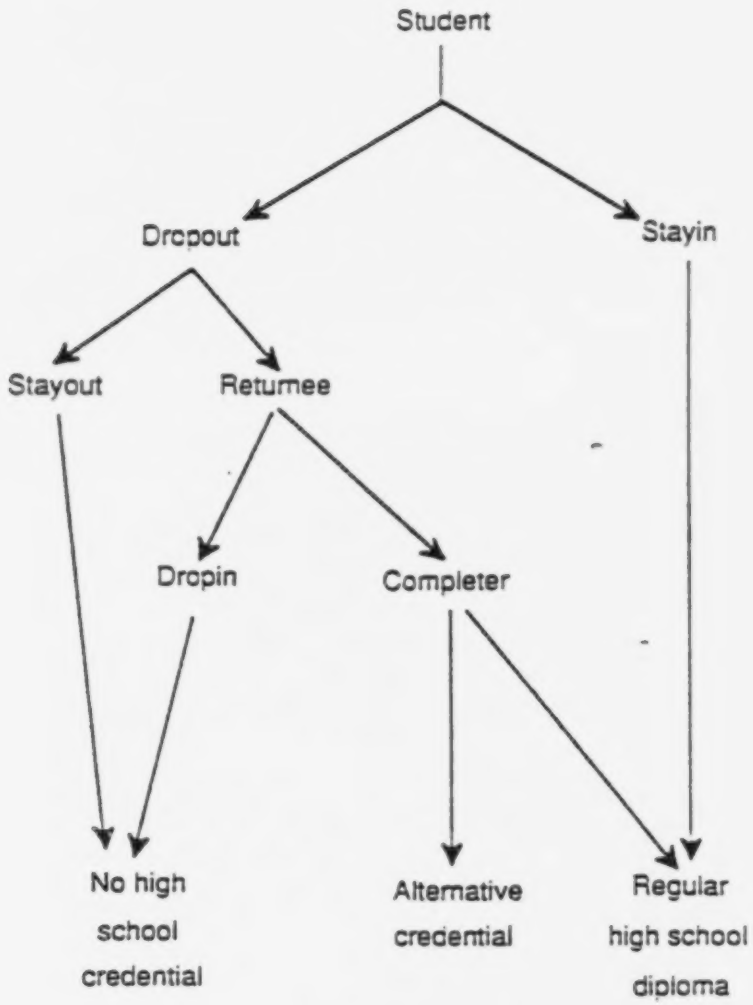
- National data on dropouts over time are not available. Data typically reported concern high school graduation or completion rates, which are not the same as a dropout rate.

The differences between a dropout rate and a graduation rate are illustrated by Figure 1, which traces alternative educational paths a student may pursue. Conceptually, a school dropout can be thought of as someone whose progress toward a high school diploma has been interrupted by a period of nonenrollment in school. All students, then, can be characterized as either dropouts or "stayins," with stayins having continuous school enrollment through high school graduation. However, some dropouts eventually do graduate from high school or obtain an alternative credential.

Dropouts can be classified as either "stayouts" or "returnees." Stayouts are those dropouts who have never returned to the educational system, while returnees are dropouts who have returned to the educational system at least once. The "educational system" here refers not only to the same school as was previously attended, but also to other schools and settings, including alternative and nonregular day education programs, and to other credentialing procedures such as the General Educational Development examination (GED) or specific State equivalency tests.

There are two types of returnees: "dropins," who have come and gone again (perhaps repeatedly) without receiving a diploma (or other credential), and

FIGURE 1 – Alternative educational paths through high school



"returnee-completers," who have returned and have eventually earned a diploma or its equivalent.[1] Included in the latter group are those students whose return to the system consists only of taking and passing an equivalency examination.

The Bureau of the Census publishes estimates of the proportion of different age groups who have completed high school (public and private) based on responses to a household survey. The Center for Statistics reports a graduation rate, derived from its Common Core of Data (CCD) collection, which represents the number of public high school graduates nationally in a given year as a fraction of the number of 9th grade students in public schools 3 school years earlier.

- Graduation rates are calculated from both Bureau of the Census and Center for Statistics data, based on the number of high school graduates in a given cohort (an age cohort in the case of the Bureau of the Census and a grade cohort in the case of the Center for Statistics) at a specific point in time.

In either case returnee-completers who have gained their credentials through several different paths are included along with stayins in the count of graduates. However, stayins making slower than normal progress are implicitly considered dropouts, since they are not yet graduates.[2]

The Center for Statistics does have national data on dropouts from the High School and Beyond study, but those data are only for a single cohort of students, high school sophomores in 1980. Furthermore, because the students were surveyed during their sophomore year, the dropout rate is underestimated since it does not take into account those who had left school prior to that time.

Dropout and Completion Data

Although the Bureau of the Census' and Center for Statistics' methods for calculating high school graduation rates are very different, they produce rates for a similar age group that are quite similar. For those at the age when students are expected to graduate, both methods reveal that:

- Nationally for the past decade, slightly less than three-quarters have completed high school, and
- High school completion rates improved somewhat after 1982 (Table 1).

Completion rates have increased substantially in the period since World War II. The completion rate for 18- to 19-year-olds was 43 percent in 1947 (U.S. Department of Commerce, 1948).

Dropout rates vary considerably across schools and population groups (Table 2).

- Students in urban areas are more likely to drop out than those in rural and suburban areas.
- Students in public schools drop out more than those in Catholic schools.
- Blacks and Hispanics are more likely to drop out than whites.
- Men are more likely to leave school before graduation than women.
- Students from lower socioeconomic backgrounds are more likely to drop out (U.S. Department of Education, 1983).

Reasons for Dropping Out

Knowledge about why young people drop out of school can help schools, school districts and States in developing effective policies and practices for encouraging them to stay in or return to school.

- Students drop out of school for a variety of reasons, which are related to both in-school and out-of-school experiences.

There is no one reason why students drop out of school. But the reasons for, and factors associated with, dropping out can be grouped into a few basic categories: academic performance, social adjustment, and early transition into adulthood (Pallas, 1984). The most current data on reasons for dropping out are from the High School and Beyond study.

Academic Performance

Students' marks in school and, to a lesser extent, performance on standardized tests are salient indicators of academic success or failure. Students who ex-

Table 1

High school completion rates using Bureau of the Census and Center for Statistics data: 1974 to 1985

Year	Percent completing high school	
	Bureau of the Census[1]	Center for Statistics[2]
1974	73.4	75.7
1975	73.7	74.7
1976	73.1	75.1
1977	72.9	74.7
1978	73.5	73.7
1979	72.8	72.6
1980	73.7	71.9
1981	72.5	72.1
1982	72.0	72.8
1983	72.7	73.9
1984	73.3	74.1
1985	74.6	—

—Not available.

[1] Proportion of 18- and 19-year-olds who have completed high school.

[2] Public high school graduates as a proportion of public school 9th graders three school years earlier.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, *School Enrollment—Social and Economic Characteristics of Students: October* (various years) and Current Population Survey, October 1985, special tabulations. U.S. Department of Education, National Center for Education Statistics, *The Condition of Education* (various years) and *Digest of Education Statistics* (various years).

Table 2

Dropout rates for 1980 high school sophomores by sex and selected background characteristics

Background characteristic	Percent dropout rate		
	Total	Male	Female
All students	13.6	14.7	12.6
Race/ethnicity			
American Indian and Alaskan natives	29.2	27.2	31.8
Hispanic	18.0	18.1	18.0
Black	17.0	20.3	14.1
White	12.2	13.0	11.5
Asian American	3.1	3.5	2.7
Socioeconomic status			
High	5.2	7.0	3.2
Middle	9.0	9.6	8.3
Low	17.4	17.8	17.1
Unknown	31.6	32.3	30.9
Community type			
Urban	18.9	20.8	17.0
Suburban	11.8	12.5	11.0
Rural	12.8	13.6	12.0
Geographic region			
Northeast	11.3	13.4	9.0
North Central	12.0	12.2	11.7
South	15.2	16.4	14.0
West	16.6	17.0	16.3
School type			
Public	14.5	15.5	13.6
Catholic	2.3	3.2	1.6
Other private	—	—	—
High school program			
Academic	4.0	4.5	3.6
General	12.9	12.7	13.0
Vocational/technical	15.1	16.9	13.2

—Estimates not presented because of small sample size and high nonresponse in the base-year sample.

SOURCE: U.S. Department of Education, National Center for Education Statistics (1983), *High School Dropouts: Descriptive Information from High School and Beyond*, NCES 83–221b.

perience failure in school are more likely to drop out of the system.

- Poor academic performance is the best predictor of who drops out of school.
- Students with a "D" average are 5 times more likely to drop out than students with a "B" average (U.S. Department of Education, 1983).

Social Adjustment

Students experiencing difficulty negotiating the personal and social adjustments of adolescence are more likely to drop out of school.

- Students who are rebellious, delinquent or chronically truant drop out of school at higher rates than those who are not.

Truancy and getting in trouble in school frequently foreshadow dropping out of school. Among high school sophomores, chronic truants are 40 percent more likely to drop out of high school than regularly attending students, everything else being equal, and delinquent youth are 25 percent more likely to drop out than are comparable nondelinquent youngsters (Pallas, 1984).

Early Transition into Adulthood

Adolescents who assume adult responsibilities at an early age may find it difficult to cope with both school and adulthood. Teenagers assuming adult family and work roles are more likely to drop out of school than youngsters who postpone those roles.

Adult family roles. Substantial numbers of young women claim pregnancy or marriage as reasons for dropping out of school.

- Among young women, only poor academic performance rivals the importance of adult family roles as a reason for dropping out of high school (U.S. Department of Education, 1983).

Among female dropouts from the sophomore class of 1980, 31 percent claimed they dropped out because they married or planned to marry, while 23 percent gave pregnancy as a reason for dropping out (students could give more than one reason).

Adult work roles. Many dropouts report that they left high school to go to work (U.S. Department of Education, 1983; Rumberger, 1983). Dropouts report leaving both because they had to support a family, and because they were offered jobs and chose to work (U.S. Department of Education, 1983).

- Working at a regular job while in high school increases by more than one-third the chances that a youth will drop out compared to youngsters who are not as involved in work (Pallas, 1984).
- High school students who work over 20 hours per week are more likely to drop out than those who do not work at all (D'Amico, 1984).

Working more than 20 hours per week may contribute to an increased likelihood of dropping out because of the drain on time and energy available for schoolwork. Alternatively, working may teach youngsters the importance of persistence and dependability, traits critical for successful schooling as well. This may account for the fact that those who work less than 20 hours per week are less likely to leave school than those who work more hours or do not work at all (D'Amico, 1984).

The Consequences of Dropping Out

Dropping out of school worsens the life chances of school leavers. Education is generally regarded as a means for social mobility, and youth who fail to complete high school tend to damage their chances of future success. Nongraduates do worse than high school graduates in the labor market and in overall economic well-being.

However, it is unclear how much of the differential between dropouts and stayins is attributable to dropping out as opposed to other factors, since dropouts have other disadvantages as well. They tend to come from disadvantaged families. They are disproportionately minority youngsters, and frequently have socially and economically deprived backgrounds (Pallas, 1984; Rumberger, 1983: Table 2). Furthermore, as was noted earlier, dropouts often have a history of academic failure.

Labor Market

School dropouts are less likely to participate in the labor force than high school graduates. Fourteen percent of male dropouts and about one-half of female dropouts age 16 to 24 were not participants in the labor force, that is, were neither employed nor looking for work, in 1985. Among high school graduates

not enrolled in college, much lower proportions—6 percent of males and 20 percent of females—were not in the labor force in 1985 (U.S. General Accounting Office, 1986).

Among labor force participants, noncompleters also have higher rates of unemployment than high school graduates.

- In 1985 the unemployment rate for men and women age 16 to 24 who had not graduated from high school was more than double the rate for high school graduates (U.S. General Accounting Office, 1986).

- Those with fewer than 12 years of schooling comprise a large part of the long-term unemployed (Feldstein & Ellwood, 1982).

Income

Among those who work full time, people who do not graduate from high school earn less money than high school graduates. The median annual income of year-round full-time workers is reported annually by the Bureau of the Census.

- Among full-time, year-round workers 25 years or older in 1985, earnings of high school graduates with no college experience were higher than earnings of those with 9 to 11 years of school—26 percent for men and 31 percent for women (U.S. Department of Commerce, 1986).

- This earnings gap between persons with exactly 12 years of schooling and those with 9 to 11 years had increased between 1970 and 1985. In 1970 it was approximately 12 percent for men and 20 percent for women (U.S. Department of Education, 1986).

These figures actually underestimate the income differential between high school graduates and noncompleters, in that some individuals do not even complete 9 years of schooling. The annual earnings of year-round, full-time workers who have completed fewer than 9 years of schooling are substantially lower than the earnings of those who have completed some high school. The gap between the earnings of high school graduates obtaining no further schooling and the earnings of those completing less than 9 years of schooling is even greater than the discrepancies noted above—approximately one-third for those with 8 years of school and about 60 percent for those with under 8 years in 1985 (U.S. Department of Commerce, 1986).

The Bureau of the Census has reported estimates of lifetime (age 18 to 65) earnings by years of school completed, as of 1979 (U.S. Department of Commerce, 1983).

- The estimated lifetime earnings of high school graduates are approximately $200,000 higher than the earnings of those who do not complete high school.

It is estimated that a male who completes fewer than 12 years of school (stayouts and dropins) can expect to earn $601,000 between the ages of 18 and 65, while a male who completes exactly 12 years of school can expect to earn $861,000.[3] The difference in the expected lifetime earnings of male noncompleters and high school graduates who obtain no further education is thus $260,000. The differential is not as large for women: $170,000 ($381,000–$211,000).

In another sense, these income comparisons underestimate the cost of not finishing high school. High school graduates who attend college earn even more, both annually and over their working careers, than do high school graduates who obtain no further schooling. Comparisons between noncompleters and high school graduates not pursuing college do not reflect the sizable economic returns that many high school graduates derive from continuing their education in college.

Not all of the differences between the earnings of noncompleters and terminal high school graduates can be attributed solely to the presence or absence of a diploma. Noncompleters and graduates differ in many ways, with graduates showing more persistence, dependability and ability than stayouts and dropins.

- These and other factors that distinguish graduates from noncompleters are highly valued by employers, and account partly for the differences in earnings between the two groups.

- McDill, Natriello, and Pallas (1986) conclude that about one-half of the difference in lifetime earnings between noncompleters and graduates is due to differences between them in ability and other factors, and about one-half is due to dropping out.

Regardless of what adjustments are proposed, estimates of the economic consequences of not completing high school are substantial.

Nonmonetary Consequences

There are nonmonetary consequences of dropping out as well. While still in school, dropouts score considerably lower than stayins on standardized tests of cognitive performance (Pallas, 1984). There now is evidence that dropping out is associated with a further widening of the gap in achievement between dropouts and stayins.

- Students who drop out show less cognitive growth than students who persist to graduation.

A battery of cognitive tests was administered to High School and Beyond sophomores in the spring of 1980, and again 2 years later, when some had dropped out and the stayins were about to graduate from high school. Alexander, Natriello, and Pallas (1985) showed that, all else being equal, the students who had stayed in school improved their test performance during the 2-year period more than students who had dropped out. These tests were not closely linked to a specific high school curriculum, but tapped more general knowledge.

Other nonmonetary consequences of dropping out include poorer health, decreased political participation, and lessened social mobility. However, there are no recent and reliable estimates of these social costs of dropping out (Lyke, 1986).

Returning to the Educational System

Most dropouts, even when surveyed shortly after dropping out, believe that leaving school short of graduation was a poor decision (Peng, 1985). Many return to school at some point.

- An estimated 40 percent of high school dropouts return to the educational system (i.e., become returnees).

A recent study estimated that, of the approximately 100,000 dropouts from the California high school class of 1983, almost 40 percent either received a diploma equivalent or entered trade school or community college immediately after leaving high school (California Legislature Assembly Office of Research, 1985). California is somewhat unusual in allowing 18-year-olds without a high school diploma or the equivalent to enroll in community colleges, so the national proportion could be somewhat lower. On the other hand, the 40 percent in California refers only to returns immediately after leaving high school, rather than eventual return to the educational system.

Many of those returning to school ultimately complete high school or receive an alternative credential (returnee-completer).

- An estimated 30 percent of the students who drop out eventually receive a high school diploma or alternative credential (Kolstad & Owings, 1986).

- Students who drop out later in their high school careers are more likely to return to and complete high school than are early dropouts (Kolstad & Owings, 1986).

Based on data from the High School and Beyond study, generally the same groups of students who are most prone to drop out are the ones least likely to return and complete high school or receive an alternative credential within two years of the time most of them would have graduated from high school.

- Fewer black and Hispanic dropouts return and finish than white dropouts.

- Dropouts from low socioeconomic backgrounds are less likely to complete high school than those from more advantaged backgrounds.

- Low test scores make it less likely a dropout will later complete a high school education.

- Dropouts living in rural and urban areas do not complete high school as frequently as those from suburban areas.

While males drop out more than females, once they have dropped out they are more likely to return and complete than females (Kolstad & Owings, 1986).

Older returnees typically do not reenter regular day high school programs. Alternative programs have become more prevalent in the past 20 years. Many States and school districts have developed adult basic education programs to serve the needs of adults seeking secondary schooling. These programs lead to a variety of certification schemes, including passing an equivalency examination.

The most frequent way to obtain an equivalency credential is through the General Educational Development (GED) examination.

- The number of persons taking the GED examination increased more than tenfold from 1961 to 1985 (Figure 2).[4]
- The number of credentials issued has followed a similar course, peaking in the early 1980's at just over 500,000 per year.
- Over 440,000 persons met State requirements for passing the GED examination in 1985 (GED Testing Service, 1986).

The GED and other credentialing systems designed for adults help to explain age patterns in graduation and completion rates.

- National data show that the proportion of individuals who have completed high school increases considerably after age 18 (Table 3).
- The magnitude of the noncompletion problem differs substantially depending on whether one considers 18-year-olds or 30-year-olds. In 1985, the proportion of 31- to 34-year-olds who had not completed high school was 12.6 percent, as compared to 25.5 percent for 18- and 19-year-olds.

The increase in completion rates with age reflects several phenomena: students still in school at age 18-19 completing high school, plus dropouts returning to school and completing regular graduation requirements or passing the GED or other equivalency examination.

The effects of obtaining alternative high school graduation credentials have not been studied carefully. Little is known about the social, economic and educational consequences of obtaining high school graduation credentials outside of regular day school programs. However, there is some indication that holders of alternative credentials may not do as well after high school as regular day school graduates.

- Researchers at the University of Wisconsin have found that GED holders who enrolled in college were much less likely to graduate than regular day high school graduates (Tugend, 1986).

A high school equivalency credential may represent an intermediate status between high school dropout and regular day school graduate. The Wisconsin data indicate that many GED recipients have serious academic shortcomings, and perform academically at relatively low levels. At the same time, though, obtaining a high school equivalency credential shows a degree of persistence and ambition exceeding that of the typical high school dropout.

Further research is needed on the characteristics and experiences of holders of high school equivalency credentials, and differences in the consequences of alternative routes to high school completion. While the alternative credential holder may not be as successful as a regular day school graduate, he or she may be more successful than a dropout who never returns to the educational system.

Implications

The analyses of high school dropouts reported here have several implications for educational policy and research. Two important issues informed by this discussion are dropout prevention/intervention programs and the significance of a high school diploma.

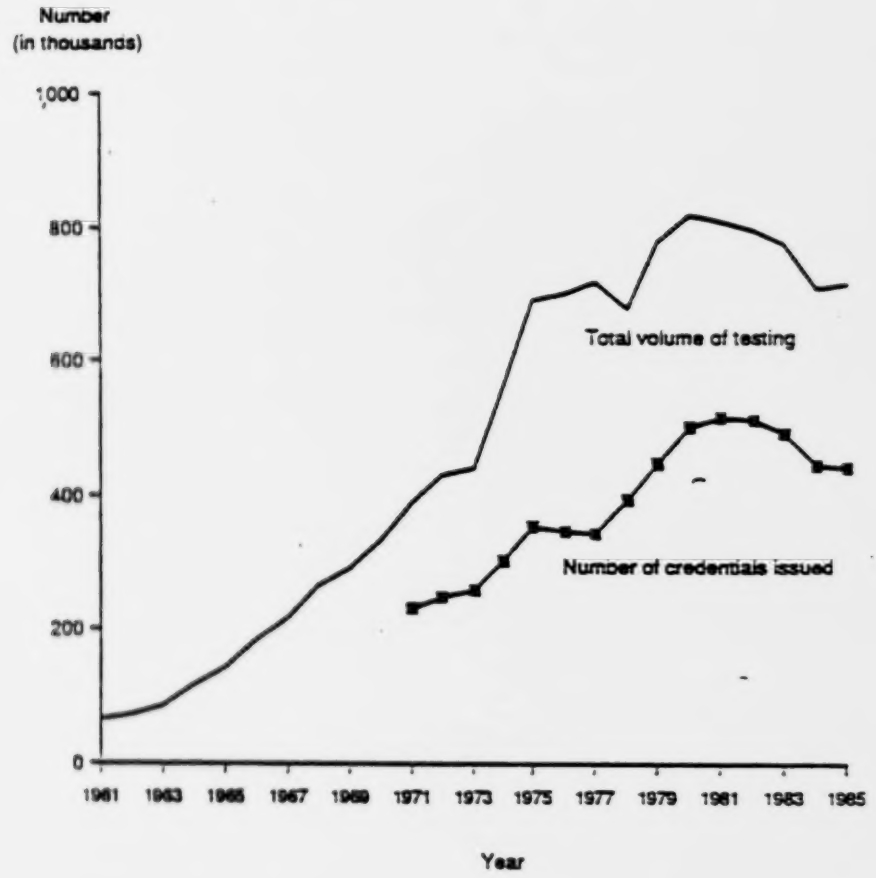
Table 3

Proportion who have completed high school by age, October 1985

Age	Proportion who have completed high school
18	67.6
19	81.5
20	84.7
21 to 25	85.4
26 to 30	85.8
31 to 34	87.4

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, October 1985, School Enrollment Supplement, special tabulations.

FIGURE 2 – Total volume of testing and number of credentials issued by the General Educational Development (GED) Testing Service: 1961 to 1985



SOURCE: General Educational Development Testing Service of the American Council on Education.
The 1985 GED Statistical Report.

Dropout Prevention/Intervention Programs

Three key facts about the process of dropping out, which were highlighted earlier in the paper, are relevant to the implementation of dropout prevention and intervention programs.

- Many of the processes involved in dropping out, such as poor grades and delinquent behavior, begin long before the high school years.
- A substantial number of students drop out of school for reasons apparently unrelated to their schooling experiences, such as assuming adult family and work roles.
- Many dropouts later return to the educational system to complete high school.

Schooling is a cumulative phenomenon, and programs in the 10th or 11th grade may not counterbalance longstanding academic problems. Programs targeting high school-aged youth may be too late to have much of an effect on schooling plans. On the other hand, patterns of behavior in the elementary grades are good predictors of patterns in later grades (Bloom, 1964).

- Since poor academic performance and social adjustment are among the best predictors of who drops out of school, it is possible to identify youngsters at-risk of dropping out before the high school years.
- Dropout prevention programs may need to deliver services to at-risk youngsters in the early grades.

Not all students who drop out do so because of school problems, however. Many drop out because of economic and family considerations. For some of these students, dropping out may be a rational decision in the short term in the face of less desirable alternatives. The high school completion rate for these students may be raised by strategies that either allow them to stay in school while meeting their other obligations or facilitate their later return to the educational system. Examples of programs that might encourage such students to remain in school include:

- Cooperative arrangements that combine school with work experience or childrearing (Lotto, 1982), and
- Programs that allow for a more flexible use of time, perhaps by lengthening a 4-year program to 5 years (McDill et al., 1986).

However, a demonstration program that provided part-time jobs during the school year and full-time jobs during the summer to dropouts or potential dropouts on the condition they stay in or return to school did not decrease the likelihood of dropping out (Borus, 1985).

Since many dropouts come to believe that leaving school was a bad decision (Peng, 1985) and a substantial share of them return to school, another area where additional effort might be productive is alternative programs. The success of efforts to encourage dropouts to become returnees hinges on identifying the target population of out-of-school youngsters who lack a high school diploma, and understanding why they left school.

- Interventions designed to bring young people back to school need to be fashioned in light of the dropouts' previous educational histories as well as their current needs.

Alternative High School Credentials

In contemporary society a high school diploma signifies successful completion of a program of studies that many believe provides at least minimal preparation for adult roles and responsibilities. A high school diploma is also thought to certify certain levels of academic performance, persistence, and dependability. Employers may require a high school diploma of prospective employees as a screening device, to ensure minimum levels of these valued traits.

The ways of completing high school have expanded considerably beyond regular day school programs to include the GED examination and other equivalency examinations.

- Little is known about the implications of obtaining varying types of credentials.
- It would be desirable to understand better who receives which credentials, and what the consequences of obtaining these various high school credentials might be.

If different credentials signify different skills, aptitudes, and traits, then it is important for employers, policymakers, and school officials to be aware of these differences.

Footnotes

[1]Figure 1 is drawn from the standpoint of the completion of the path (in other words, where an individual ends up). At any given time, an individual may be in progress, which means that an individual's status can change over time. The figure does not reflect an intermediate status for returnees, perhaps called "reenrollees," who are currently enrolled but whose eventual status is unknown. Returnee-completers may enter and leave the educational system more than once before completing.

[2]Other problems with Census and CS data are detailed in Pallas and Verdugo (1986) and Verdugo and Pallas (1985).

[3]The data were derived from earnings reported in 1979, but they have been converted to constant dollars based upon consumer prices in 1981.

[4]People of all ages take the GED, but approximately three-quarters are between 18 and 34 (GED Testing Service, 1986). That age group grew by about 80 percent between 1961 and 1985, while GED test-takers were increasing more than tenfold.

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